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02 May 1988
SUPERSEDING
MIL-C-39029C
23 May 1984

MILITARY SPECIFICATION

CONTACTS, ELECTRICAL CONNECTOR, GENERAL SPECIFICATION FOR

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

1. SCOPE

1.1 Scope. This specification covers the general requirements for removable crimp, solderless wrap, and solder type electrical contacts for use in connectors and other electric and electronic components (see 6.1). These contacts shall be capable of operating within the temperature range as specified (see 3.1).

1.2 Classification.

1.2.1 Military part number and BIN (basic identification number) code. Each contact shall be identified by a nonsignificant, but distinctive three digit number indicating the BIN code as specified on the applicable specification sheet (see 3.1 and the appendix). The military part number shall be as specified in the military specification sheets (see 3.1).

1.2.2 Class. Contacts covered by this specification shall be of the following classes as specified (see 3.1).

a. Class A - Maximum operating temperature +125°C.

b. Class B - Maximum operating temperature +200°C.

1.2.3 Type. Contacts and bushings covered by this specified shall be of the types shown in Table I as specified (see 3.1).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Systems Engineering and Standardization Department (Code 53), Naval Air Engineering Center, Lakehurst, NJ 08733-5100, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

TABLE I. Contact types.

Type	Material	Application
A	Copper alloy	General purpose
B	Ferrous alloy	Hermetic
C	Chromel	ANSI MC96.1 type E (chromel-constantan) thermocouple ANSI MC96.1 type K (chromel-alumel) thermocouple
	Alumel	ANSI MC96.1 type K (chromel-alumel) thermocouple
	Constantan	ANSI MC96.1 type E (chromel-constantan) thermocouple ANSI MC96.1 type J (iron-constantan) thermocouple ANSI MC96.1 type T (copper-constantan) thermocouple
	Iron	ANSI MC96.1 type J (iron-constantan) thermocouple
	Copper	ANSI MC96.1 type T (copper-constantan) thermocouple
D	Copper alloy	Shielded (including coaxial, twinaxial and triaxial)

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards and handbooks. Unless otherwise specified, the following specifications, standards and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this specification to the extent specified herein.

SPECIFICATIONS

Federal

QQ-N-290 Nickel Plating (Electrodeposited)

QQ-S-365 Silver Plating, Electrodeposited: General Requirements for

QQ-S-571 Solder, Tin Alloy: Tin-Lead Alloy and Lead Alloy

Military

MIL-F-14256 Flux, Soldering, Liquid (Rosin Base)

MIL-W-16878 Wire, Electrical, Insulated, High Temperature

MIL-I-17214 Indicator, Permeability: Low-Mu (Go-No-Go)

SPECIFICATIONS (Continued)

Military (Continued)

MIL-C-22520	Crimping Tools, Terminal, Tool Kits, Hand or Power Actuated, Wire Termination, General Specification for
MIL-W-22759	Wire, Electric, Flouropolymer-Insulated, Copper or Copper Alloy
MIL-G-45204	Gold Plating, Electrodeposited
MIL-S-45743	Soldering, Manual Type, High Reliability, Electrical and Electronic Equipment
MIL-C-55330	Connectors, Electrical and Fiber Optic, Packaging of
MIL-W-81381	Wire, Electric, Polyimide-Insulated, Copper or Copper Alloy

STANDARDS

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-454	Standard General Requirements for Electronic Equipment
MIL-STD-1344	Test Methods for Electric Connectors
MIL-STD-1646	Selection and Use of Servicing Tools for Electric Contacts and Connections
MIL-STD-45662	Calibration Systems Requirements
MS3197	Gage Pin for Socket Contact Engagement Test
MS3348	Contact Bushing, Electric, Wire Barrel

(See supplement for list of associated specification sheets and MS standards.)

(Copies of specifications, standards, handbooks, drawings and publications required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

ANSI B46.1	Surface Texture (Surface Roughness, Waviness and Lay)
ANSI MC96.1	Temperature Measurement Thermocouple

(Applications for copies should be addressed to: American National Standards Institute, Inc., 1430 Broadway, New York, NY 18018.)

ELECTRONIC INDUSTRIES ASSOCIATION (EIA)

EIA RS359	EIA Standard Colors for Identification and Coding (ANSI C83.1)

(Application for copies should be addressed to: Electronic Industries Association, 2001 Eye Street, N.W., Washington, DC 20006.)

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

SAE Aerospace Information Report AIR 1351	Manufacturer's Identification of Electrical Connector Contacts, Terminals and Splices

(Application for copies should be addressed to: Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15906.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheets. In the event of any conflict between requirements of this specification and the specification sheet, the latter shall govern. The following information shall appear on each specification sheet.

a. Military part number and BIN code (see 1.2.1 and 3.6.2) for each contact.

b. Dimensions.

c. Class (see 1.2.2).

d. Type (see 1.2.3).

e. Material (type C).

f. Tensile strength (type D) (inner and outer contacts).

g. Contact resistance (type D) (inner and outer contacts).

h. Engagement and separation force (type D) (inner contact and contact assembly and test gages).

i. Dielectric withstanding voltage (type D).

j. Insulation resistance (type D) (when other than in 3.5.18).

k. Wire types required for testing (type D).

l. Mating contact.

m. Usage information.

n. Applicable military crimping tools, turrets, positioners and dies.

o. Applicable military installing and removal tools.

p. Low signal level contact resistance (type D inner contacts).

q. Vibration.

r. Shock.

s. Finish (if other than overall see 3.3.2).

t. Maximum operating temperature (see 6.7).

3.2 Qualification. Contacts furnished under this specification shall be products which are qualified for listing in the applicable qualified products list (QPL) at the time set for the opening of bids (see 4.5 and 6.3).

3.2.1 Use of military part numbers. Military part numbers shall not be applied to a product, except for qualification test samples (6.3), until notification has been received from the activity responsible for qualification that the product has been approved for listing on the qualified products list.

3.3 Materials. Materials shall be as specified herein. However, when a definite material is not specified, a material shall be used which will enable the contacts to meet the performance requirements of this specification and the applicable specification sheet (see 3.1). Acceptance or approval of any constituent material shall not be construed as a guaranty of acceptance of the finished product.

3.3.1 Metals. The material for contacts and bushings shall be electrically conductive and shall be in accordance with Table I. Hoods shall be made of corrosion-resistant steel.

3.3.1.1 Dissimilar metals. When dissimilar metals are employed in intimate contact with each other, suitable protection against electrolytic corrosion shall be provided as specified in Requirement 16 of MIL-STD-454.

3.3.2 Finish (see 6.7). Types A, B and D contacts shall have a finish as specified in 3.3.2.1 or 3.3.2.2. Each desired finish shall be qualified.

3.3.2.1 Overall finish.

3.3.2.1.1 Types A and B. The external plated surface diameters of the bodies of contact sizes larger than 12 and size 12 contacts used in MIL-C-5015 and MIL-C-83723, Series II connectors shall be silver-plated .00020 inch thick minimum in accordance with QQ-S-365. Unless otherwise specified (see 3.1), the external plated surface diameters of the body of all other size 12 and smaller contacts, except as noted in 3.3.2.1.4, shall be gold-plated in accordance with MIL-G-45204, type II, grade C, class 1 (0.000050 minimum), over a suitable underplate except silver underplate shall not be used.

3.3.2.1.2 Type C. Ferrous iron, ANSI type J contacts shall be suitably protected from corrosion (see 3.1).

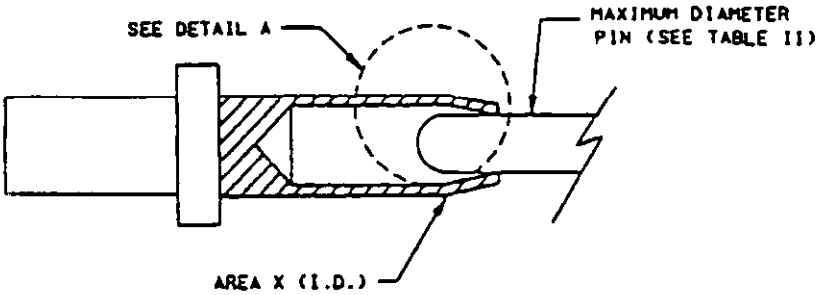
3.3.2.1.3 Type D. Inner and outer contacts of shielded contacts shall be gold-plated in accordance with MIL-G-45204, type II, grade C, class 1, over a suitable underplate, except silver underplate shall not be used.

3.3.2.1.4 Accessory members. Accessory members such as pressure members and retaining devices shall be corrosion-resistant material or shall be passivated or suitably treated to resist corrosion. Hoods shall be corrosion-resistant steel.

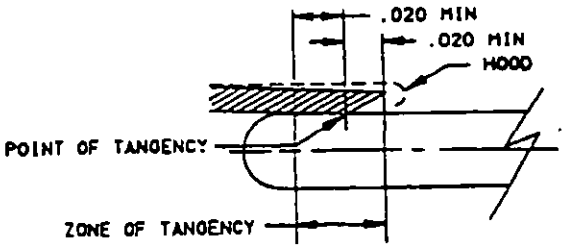
3.3.2.2 Localized finish (see 6.7 and appendix).

3.3.2.2.1 Types A and B. The body of contact size 12 and smaller shall have gold in accordance with MIL-G-45204, type II, grade C, class 1, applied to areas X and Y (see Figure 1), as applicable. All other surfaces, except as noted in 3.3.2.1.4 and solderless wrap termination areas, shall be finished with gold in accordance with MIL-G-45204, any type and grade (no thickness specified). The solderless wrap termination areas shall be plated the same as areas X and Y (see Figure 1), or plated with tin-lead, per MIL-P-81728, 50 to 95 percent tin, .0001 inch minimum thickness. The entire surface of the body of the contact shall have a nickel underplate per QQ-N-290, class 2, .00003 to .00015 inch thick. Gold discoloration in areas other than X and Y is acceptable.

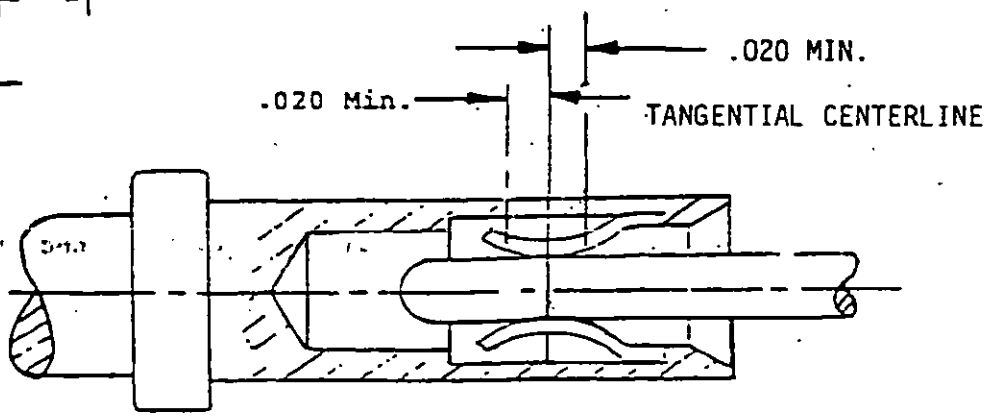
3.3.2.2.2 Type D. The entire surface of the bodies of inner and outer contacts of shielded contacts shall have gold in accordance with MIL-G-45204, type II, grade C, class 1, applied to areas X or Y as shown on Figures 1 and 2, as applicable. All other surfaces, except as noted in 3.3.2.1.4, shall be finished with gold in accordance with MIL-G-45204, any type and grade (no thickness specified). The entire surface of the body of the contacts shall have a nickel underplate per QQ-N-290, class 2, .00003 to .00015 inch thick. Gold discoloration in areas other than X and Y is acceptable.



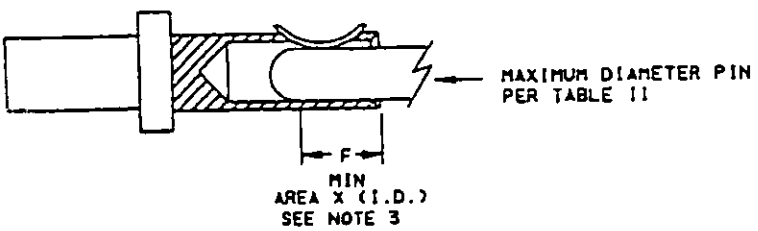
1A. Socket contact with integral pressure member (hood removed).



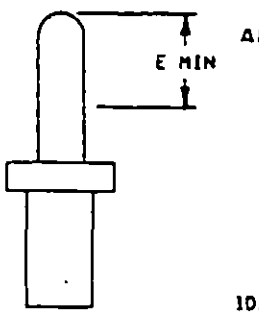
DETAIL A



1C. Socket contact with separate pressure member as primary current carrying interface.



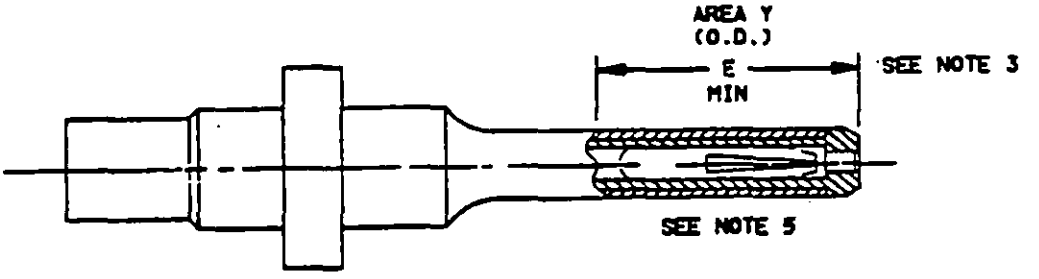
1B. Socket contact with separate pressure members.



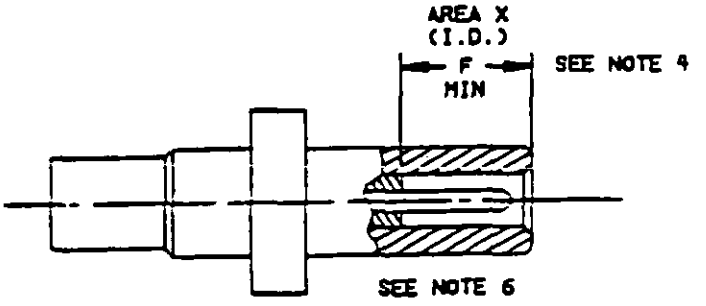
1D. Pin contact.

NOTES:
1. Dimensions are in inches.
2. For dimensions E and F, see the Appendix.
3. F equals the length of maximum electrical contact (wiping) plus .020 (0.51 mm) minimum wipe shall be equal to maximum E of mating pin engagement minus the spherical radius.
4. E equals length of maximum electrical contact (wiping) plus .020 (0.51 mm).

FIGURE 1. Areas of applications of localized finish (types A and B, also inner contact of type D).



2A. Outer pin contact.



2B. Outer socket contact.

NOTES:
1. Dimensions are in inches.
2. For dimensions E and F, see the Appendix.
3. E equals length of maximum electrical contact (wiping) plus .020 (0.51 mm).
4. F equals length of maximum electrical contact (wiping) plus .020 (0.51 mm) minimum. Wipe shall be equal to maximum E of mating pin engagement minus the chamfer.
5. Pin contact - outer socket contact - inner (see Figure 1).
6. Socket contact - outer pin contact - inner (see Figure 1).

FIGURE 2. Areas of application of localized finish (type D outer contacts).

3.4 Design and construction. Contacts shall be of the design, construction and physical dimensions as specified (see 3.1).

3.4.1 Pin engagement end. Unless otherwise specified (see 3.1), the mating end of all contacts (except size 22 and smaller) shall be formed with an approximate spherical radius. Required flat dimension on the engaging end of the pin contact is specified in Table II. The mating end of size 22 and smaller pin contacts shall be as specified (see 3.1) and the flat shall be as specified in Table II.

TABLE II. Pin dimensions at mating end (except type D).

Engagement end size	Engagement end diameter (inches)	Engagement tip, flat diameter (inches)
4/0	.500 + .001 (0.13)(0.03)	.375 + .010 (9.53)(0.25)
2/0	.406 + .001 (10.31)(0.03)	.281 + .010 (7.14)(0.25)
0	.357 + .001 (9.07)(0.03)	.232 + .010 (5.89)(0.25)
2	.283 + .001 (7.19)(0.03)	.158 + .010 (4.01)(0.25)
4	.225 + .001 (5.72)(0.03)	.100 + .010 (2.54)(0.25)
6	.178 + .001 (4.52)(0.03)	.086 + .010 (2.18)(0.25)
8	.142 + .001 (3.61)(0.03)	.076 + .010 (1.93)(0.25)
10	.125 + .001 (3.18)(0.03)	.072 + .010 (1.83)(0.25)
12	.094 + .001 (2.39)(0.03)	.062 +.000, -.015 (1.57)(0.00)(0.38)
14	.078 + .001 (1.98)(0.03)	.039 +.000, -.015 (9.91)(0.00)(0.38)
16	.0625 + .0010 (1.578)(0.03)	.032 +.000, -.015 (0.81)(0.00)(0.38)
20	.040 + .001 (1.02)(0.03)	.020 +.000, -.015 (0.51)(0.00)(0.38)
22	.0300 + .0005 (0.762)(0.013)	.015 Max (0.38)

TABLE II. Pin dimensions at mating end (except type D) (continued).

Engagement end size	Engagement end diameter (inches)	Engagement tip, flat diameter (inches)
23	.0270 + .0005 (0.686)(0.013)	.013 Max (0.33)
24	.0250 + .0005 (0.635)(0.013)	.012 Max (0.30)
26	.0200 + .0005 (0.508)(0.013)	.010 Max (0.25)
28	.015 + .0005 (0.381)(0.013)	.0075 Max (0.191)

3.4.2 Wire barrel sizes. Wire barrel sizes and ranges shall be as specified in Table III.

3.4.3 Socket mating end. The mating end of socket contacts shall be rounded or chamfered to direct and center the entry of the pin contact. Mechanical pressure members shall assure contact pressure between mated pins and sockets and the pressure member shall be protected from probe damage, oversize pin and handling damage.

3.4.3.1 Size 12 and smaller. The mating end of size 12 and smaller removable socket contacts shall be of a closed-entry design and as follows (see 3.1):

a. The closed-entry design shall exclude the entry of a pin 0.005 inch larger than the allowable maximum pin diameter.

b. Unless otherwise specified, the pressure member shall not be exposed.

3.4.3.2 Size 10 and larger. For size 10 and larger socket contacts, the design shall be as specified (see 3.1).

3.4.4.1 Crimp terminations. Wire barrels shall conform to Table III and shall be capable of being crimped to the wire sizes specified in Table III. Unless otherwise specified (see 3.1), all wire barrels shall be capable of being crimped with MIL-C-22520 crimping tools. Wire barrel sizes 0, 4 and 8 shall be capable of being crimped with MIL-C-22520/23 crimping die as specified (see 3.1).

3.4.4.2 Solder terminations. All solder cavities shall be so designed that during normal soldering operation there will be no damage and no liquid solder will flow through to the front of the mating end preventing engagement of the contact. Unless otherwise specified, the wire barrels shall accommodate the maximum wire size as specified in Table III. Except for type C contacts, the interior surfaces of size 12 and 16 wire barrels, if specified,

TABLE III. Wire barrel range accommodations.

Wire barrel size	Wire size										
	0000	00	0	1	2	4	6	8	10	12	14
0000	X	X 1/									
00		X	X 1/								
0			X	X	X 1/						
1				X	X 1/		X 1/				
2					X	X 1/					
4						X	X 1/				
6							X	X 1/			
8								X	X 1/		
10									X	X 1/	
12										X	X

Wire barrel size	Wire size								
	16	18	20	22	24	26	28	30	32
16	X	X	X						
20			X	X	X				
22				X	X	X	X 2/4/		
22D				X	X	X	X 4/		
22M 3/					X	X	X 4/		
24					X	X	X 4/		
28 4/							X 4/	X 4/	X 4/

1/ With electrical conductive bushing MS3348 (see 3.4.5).
2/ Applies only to contact size 23-22.
3/ Inactive for new design.
4/ See 4.3.2.

shall be completely tinned over 100 percent of the full circle portion and for at least 50 percent of the remainder of the solder well area. The interior surfaces of size 10 and larger wire barrels shall be completely tinned. Solder shall conform to QQ-S-571, SN60 or SN63. Solder fluxes shall conform to MIL-F-14256. No excess solder shall be on the exterior of the wire barrels. Soldering shall be in accordance with MIL-S-45743 or Requirement 5 of MIL-STD-454.

3.4.5 Bushing (size 10 and larger) wire barrels. The bushing shall be electrically conductive and shall be contained in the wire barrel allowing accommodation of the maximum wire size as specified in Table III. The bushing shall not obstruct the wire inspection hole. Bushings shall conform to MS3348.

3.4.6 Surface roughness. The roughness height, defined in ANSI B46.1 of pin mating surfaces indicated (see 3.1) shall be 32 microinches or less after plating. Other surfaces shall be 63 microinches or less after plating.

3.5 Performance.

3.5.1 Permeability (types A and D). When tested as specified in 4.7.2, the relative magnetic permeability of the contact shall be no greater than 2.0.

3.5.2 Axial concentricity. When measured as specified in 4.7.3, unless otherwise specified (see 3.1), all diameters shall be concentric to each other within the limits specified in 3.5.2.1 and 3.5.2.2.

3.5.2.1 After manufacture (unwired contacts). The total indicator reading (TIR) shall not exceed 0.006 for sizes 4/0 through 16 and 0.005 for sizes 20 through 28.

3.5.2.2 After crimping to wire (wired contacts). The TIR shall not exceed 0.030 for sizes 4/0 through 10, 0.012 for sizes 12 through 16, and 0.011 for sizes 20 through 28. Only contacts which are end positioned in the crimping tool are required to be checked for axial concentricity at the mating end after crimping to wire.

3.5.3 Low signal level contact resistance.

3.5.3.1 Type A (size 16 mating end and smaller). When tested as specified in 4.7.4, the low signal level contact resistance of each mated contact pair shall not exceed the applicable values specified in Table IV.

3.5.3.2 Type D (applicable to center contact only). When tested as specified in 4.7.4, the low signal level contact resistance of each mated contact pair shall not exceed the values specified (see 3.1).

3.5.4 Contact resistance. When contacts are tested as specified in 4.7.5, the contact voltage drop for the various types shall be as follows.

3.5.4.1 Type A. The contact voltage drop of each mated copper alloy contact pair shall not exceed the applicable values specified in Tables V and VI.

TABLE IV. Low signal level contact resistance (type A).

Wire Size	Maximum contact resistance (milliohms)	
	ICV 1/	TCV 2/ 3/
16	5	6
20	9	11
22	15	17
24	20	23
26	31	38
28	50	60
30	75	88
32	110	125

1/ ICV - Initial condition values
2/ TCV - After conditioning values
3/ Applicable tests are temperature cycling, durability, salt spray, temperature life, industrial gas, and probe damage.

TABLE V. Contact resistance (type A) with silver-plated wire.

Wire size	Test current amperes	Maximum voltage drop (millivolts)							
		25°C ± 3°C		25°C ± 3°C 1/ After conditioning		125°C +3°C -0°C		200°C +3°C -0°C	
		Max	Max Avg	Max	Max Avg	Max	Max Avg	Max	Max Avg
0000	225	21	19	26	23	32	26	36	27
00	185	19	18	23	20	29	24	33	25
0	150	21	19	26	23	32	26	36	27
1	125	19	18	23	20	29	24	N/R 2/	N/R
2	100	17	16	21	18	26	21	29	22
4	80	23	21	28	24	35	28	40	30
6	60	25	23	30	26	38	31	43	33
8	46	26	24	32	28	39	32	45	34
10	33	33	30	40	37	50	42	57	45
12	23	42	38	51	43	63	51	71	54
14	17	40	36	48	41	60	48	68	51
16	13	49	45	59	51	74	60	84	63
20	7.5	55	50	66	56	83	67	94	71
22	5	73	66	88	75	110	88	125	94
24	3	45	41	54	46	68	55	77	58
26	2	52	47	63	54	73	63	89	67
28	1.5	54	49	65	56	81	65	92	86
30	1	60	55	73	62	90	73	103	78
32	0.5	44	40	53	45	66	53	74	56

1/ Applicable tests are temperature cycling, durability, salt spray, temperature life, industrial gas, and probe damage.
2/ N/R - No requirement.

TABLE VI. Contact resistance (type A) with nickel-plated wire.

Wire size	Test current amperes	Maximum voltage drop (millivolts)							
		25°C ± 3°C		25°C ± 3°C 1/ After conditioning		125°C +3°C -0°C		200°C +3°C -0°C	
		Max	Max Avg	Max	Max Avg	Max	Max Avg	Max	Max Avg
0000	225	53	48	65	58	80	65	90	68
00	185	48	45	58	50	73	60	83	63
0	150	53	48	65	58	80	65	90	68
1	125	48	45	58	50	73	60	N/R 2/	N/R
2	100	43	40	53	45	65	53	73	55
4	80	58	53	70	60	88	70	100	75
6	60	63	58	75	65	95	78	108	83
8	46	65	60	80	70	98	80	113	85
10	33	50	45	57	56	75	63	86	68
12	23	63	57	77	65	95	77	107	81
14	17	60	54	72	62	90	72	102	77
16	13	74	68	89	77	111	90	126	95
20	7.5	83	75	99	84	125	101	141	107
22	5	110	99	132	113	165	132	188	141
24	3	68	62	81	69	102	83	116	87
26	2	80	72	96	83	120	96	137	104
28	1.5	81	74	98	84	122	98	138	104
30	1	90	83	110	93	135	110	155	117
32	0.5	66	60	80	68	99	80	111	84

1/ Applicable tests are temperature cycling, durability, salt spray, temperature life, industrial gas, and probe damage.

2/ N/R - No requirement.

3.5.4.2 Type B. The contact voltage drop of each ferrous alloy contact with its applicable mating copper alloy contact shall not exceed the applicable values specified in Tables VII and VIII.

3.5.4.3 Type D. The contact voltage drop of each mated copper alloy contact pair (shielded contacts) shall not exceed the values specified (see 3.1).

3.5.5 Contact engagement and separation force (socket contact). When tested as specified in 4.7.6, unless otherwise specified (see 3.1), the contact engagement and separation force shall be within the applicable limits specified in Table IX.

3.5.5.1 Maximum average engagement force. The average engagement force with the maximum diameter MS3197 pin, unless otherwise specified (see 3.1), shall not exceed the applicable values specified in Table IX and shall be established using the sample size selected as specified in 4.5.1 or 4.6.3.1.1, as applicable.

3.5.6 Temperature cycling (types A, B and D). When tested as specified in 4.7.7, mated contact pairs shall withstand the thermal shock cycling without evidence of damage that would interfere with the mechanical or electrical performance.

3.5.7 Resistance to test probe damage (types A and B). When tested as specified in 4.7.8, socket contacts shall withstand the bending moment and depth of the test probe insertion without evidence of damage that would interfere with the mechanical or electrical performance.

3.5.8 Crimp tensile strength. When tested as specified in 4.7.9, unless otherwise specified (see 3.1), the minimum axial load required to separate the wire from the contacts (type A) either by pulling the wire out of the wire barrel or wire barrel bushing or breaking the wire within the wire barrel or wire barrel bushing, shall be not less than the applicable limit specified in Table X. No failures are permitted.

3.5.9 Durability (types A, B and D). When tested as specified in 4.7.10, the contacts shall show no evidence of defects detrimental to the mechanical or electrical performance when subjected to 500 mating cycles.

3.5.10 Vibration. When contacts are tested as specified in 4.7.11, there shall be no electrical discontinuity of 1 microsecond or greater. There shall be no defects detrimental to the mechanical or electrical performance.

3.5.11 Shock (specified pulse). When contacts are tested as specified in 4.7.12, there shall be no electrical discontinuity of 1 microsecond or greater. There shall be no defects detrimental to the mechanical or electrical performance.

3.5.12 Salt spray (corrosion) (types A, B and D). When tested as specified in 4.7.13, mated contacts shall withstand 48 hours of salt spray conditioning without defects detrimental to the mechanical or electrical performance.

TABLE VII. Contact resistance (type B) with silver-plated wire.

Wire size	Test current amperes	Maximum voltage drop (millivolts)							
		25°C ± 3°C		25°C ± 3°C 1/ After conditioning		125°C +3°C -0°C		200°C +3°C -0°C	
		Max	Max Avg	Max	Max Avg	Max	Max Avg	Max	Max Avg
0000	185	N/A 2/	N/A	N/A	N/A	N/A	N/A	N/A	N/A
00	150	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0	100	231	147	286	182	352	224	396	252
2	80	187	N/R 3/	231	N/R	282	N/R	319	N/R
4	60	253	161	308	196	385	245	440	280
6	46	242	N/R	297	N/R	363	N/R	418	N/R
8	33	286	182	352	224	429	273	495	315
10	23	363	226	418	304	550	350	627	420
12	17	462	294	561	351	693	441	781	497
14	13	440	280	528	336	660	420	748	476
16	10	539	343	649	413	814	518	924	588
20	5	605	385	726	462	913	581	1034	658
22	3	803	511	968	616	1210	770	1375	875
24	2	495	315	594	378	748	476	847	539
26	1.5	583	371	704	448	880	560	1001	637
28	1	594	378	715	455	891	567	1012	644
30	0.5	660	420	803	511	990	630	1133	721
32	0.3	484	308	583	371	726	462	814	518

1/ Applicable tests are temperature cycling, durability, salt spray, temperature life, industrial gas and probe damage.
2/ N/A - Not available.
3/ N/R - No requirement.

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TABLE VIII. Contact resistance (type B) with nickel-plated wire.

Wire size	Test current amperes	Maximum voltage drop (millivolts)							
		25°C ± 3°C		25°C ± 3°C 1/ After conditioning		125°C +3°C -0°C		200°C +3°C -0°C	
		Max	Max Avg	Max	Max Avg	Max	Max Avg	Max	Max Avg
0000	225	53	48	65	58	80	65	90	68
00	185	48	45	58	50	73	60	83	63
0	150	53	48	65	58	80	65	90	68
1	125	48	45	58	50	73	60	N/R 2/	N/R
2	100	43	40	53	45	65	53	73	55
4	80	58	53	70	60	88	70	100	75
6	60	63	58	75	65	95	78	108	83
8	46	65	60	80	70	98	80	113	85
10	23	545	331	627	456	825	545	944	630
12	17	693	441	847	539	1045	665	1177	749
14	13	660	420	792	504	990	630	1122	714
16	10	814	518	979	623	1221	777	1386	882
20	5.0	913	581	1089	693	1375	875	1551	987
22	3.0	1177	749	1419	903	1771	1127	2002	1274
24	2.0	748	476	891	567	1122	714	1276	812
26	1.5	858	546	1045	665	1287	819	1474	938
28	1.0	891	567	1078	686	1342	854	1518	966
30	0.5	990	630	1210	770	1485	945	1705	819
32	0.3	726	462	880	560	1089	693	1221	777

1/ Applicable tests are temperature cycling, durability, salt spray, temperature life, industrial gas and probe damage.

2/ N/R - Not required.

TABLE IX. Contact engagement and separation forces.

Mating end size	Initial			After conditioning 1/		
	Minimum separation force (ounces)	Maximum average engagement force (ounces)	Maximum engagement force (ounces)	Minimum separation force (ounces)	Maximum average engagement force (ounces)	Maximum engagement force (ounces)
	Minimum diameter MS3197 pin	Maximum diameter MS3197 pin	Maximum diameter MS3197 pin	Minimum diameter MS3197 pin	Maximum diameter MS3197 pin	Maximum diameter MS3197 pin
0000	15	N/R 2/	320	12	N/R	380
00	15	N/R	320	12	N/R	380
0	15	N/R	320	12	N/R	380
2	10	N/R	240	8	N/R	290
4	10	N/R	240	8	N/R	290
6	5	N/R	160	4	N/R	190
8	5	N/R	160	4	N/R	190
10	4	N/R	60	3	N/R	72
12	3	24	30	2.5	29	36
16	2	24	30	1.5	29	36
20	0.7	12	18	0.6	14	22
22	0.7	9.5	12	0.6	11.4	14
23	0.5	6.8	8	0.4	8.1	10

1/ Applicable tests are temperature cycling, durability, salt spray, temperature life, industrial gas, and probe damage.
2/ N/R - No requirement.

TABLE X. Tensile strength (type A).

Wire size	Axial load (pounds)				
	Silver tin-plated copper wire		Nickel-plated copper wire		High strength copper alloy wire
	Initial condition values	Thermal condition values	Initial condition values	Thermal condition values 1/	
0000	875	787.5	785	706.5	--
00	750	675.0	675	607.5	--
0	700	630.0	630	567.0	--
1	650	585.0	585	526.5	
2	550	495.0	495	445.5	--
4	400	360.0	360	324.0	--
6	300	270.0	270	243.0	--
8	220	198.0	200	180.0	--
10	150	135.0	135	121.5	--
12	110	93.0	100	85.0	--
14	70	61.0	60	53.0	
16	50	45	37	33	--
20	20	14	19	14.3	TBD 2/
22	12	7.5	8	6.0	TBD
24	8	6	6	4.5	TBD
26	5	4.0	3	2.5	TBD
28	3	2.25	2	1.50	TBD
30	1.5	1.13	1.5	1.13	TBD

1/ Applicable tests are temperature cycling and temperature life.
2/ TBD - To be determined.

3.5.13 Temperature life (types A, B and D). When tested as specified in 4.7.14, mated contacts shall withstand temperature conditioning for 1,000 hours without defects detrimental to mechanical or electrical performance. There shall be no diffusion/migration of the base metal through the contact outer plating.

3.5.14 Industrial gas (gold-finished contacts only) (types A, B and D). When tested as specified in 4.7.15, unmated contacts shall withstand industrial gas conditioning for 100 hours without defects detrimental to the mechanical or electrical performance.

3.5.15 Contact strength (mating end size 20 and smaller pin contacts, type A). After being subjected to mechanical loading specified in 4.7.16, pin contacts shall exhibit a permanent set no greater than 0.005 inch.

3.5.16 Plating porosity (overall gold-finished contacts only) (types A and D). When tested as specified in 4.7.17, there shall be no bubbling during the 30-second observation period when gold-finished contacts are examined for plating porosity.

3.5.17 Plating thickness (types A, B and D). When measured as specified in 4.7.18, the plating thickness of external plated surface diameters, except for corners, shall be in accordance with 3.3.2. All other surfaces shall be plated to a thickness to assure specified performance of the contact.

3.5.18 Insulation resistance (type D). When tested as specified in 4.7.19, unless otherwise specified (see 3.1), the insulation resistance shall exceed 5.0 gigohms at 25°C, and 2.0 gigohms at the maximum operating temperature specified on the applicable specification sheet (see 3.1).

3.5.19 Dielectric withstanding voltage (type D). When tested as specified in 4.7.20, crimped contacts shall show no evidence of breakdown or flashover. Test voltage and altitude shall be as specified (see 3.1).

3.5.20 Crimpability. The manufacturer shall establish material, finish and process controls to assure that crimp contacts conform to the requirements of 3.4.4.1 and 3.5.8 when subjected to 4.7.21.

3.5.21 Humidity temperature cycling (localized gold-finished contacts only). When tested as specified in 4.7.22, there shall be no evidence of defects detrimental to the electrical performance.

3.6 Marking. Removable contacts shall be permanently and legibly marked with the manufacturer's symbol or trademark and BIN code color bands (see Figure 3) or BIN code numbering (optional for size 16 and larger). If three digits are stamped or printed on contacts, the digits shall be a minimum of .060 inch high. Location of BIN code digits is optional, however, they shall remain legible following the crimping operation. Unless otherwise specified (see 3.1), markings shall remain legible after tests. Flaking of the color bands in the crimp indenter area is acceptable providing the color of the bands is still identifiable.

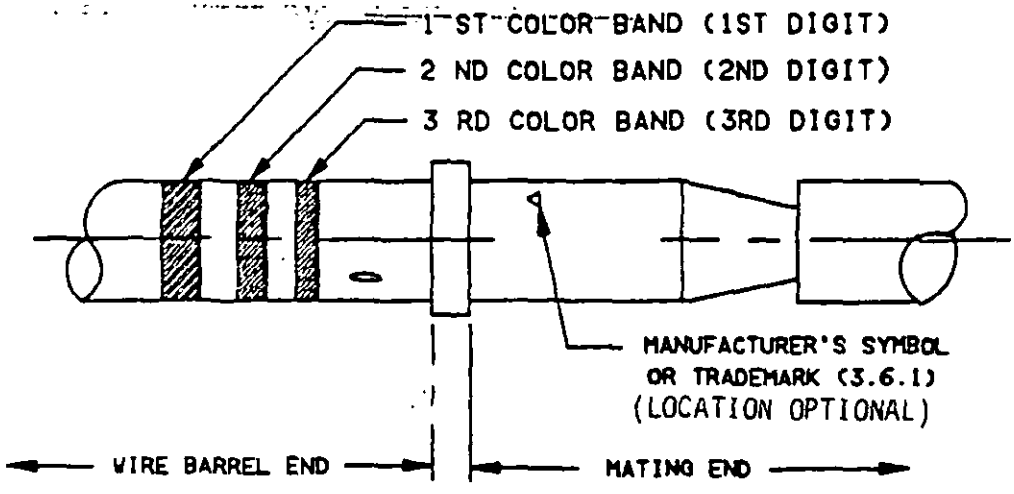

FIGURE 3. Contact marking.

3.6.1 Manufacturer's symbol or trademark (removable type). The manufacturer's symbol or trademark shall be marked on removable type contacts. The manufacturer shall list the symbol or trademark with SAE in accordance with AIR 1351.

3.6.2 BIN code color bands. Each digit of the BIN code (see 1.2.1) shall be designated on the contact by a color band in accordance with the following:

0 - Black	4 - Yellow	7 - Violet
1 - Brown	5 - Green	8 - Gray
2 - Red	6 - Blue	9 - White
3 - Orange		

The width of the first color band shall be appropriately twice the width of the second and third color bands. Unless otherwise specified, the color bands shall be located on the wire barrel and as shown on Figure 3. Colors for color bands shall be in accordance with EIA RS-359 (ANSI C83.1). Unless otherwise specified (see 3.1), colors shall remain within the specified extended limits during testing.

3.6.3 Supersession data. The present and most recently superseded part number shall be marked on a label and included in each unit pack, as in the following example:

MS39029/5-115 supersedes M39029/5-20-20.

Other superseded military part numbers may be included. A complete listing of supersession data can be found in the appendix and on slash sheets.

3.7 Workmanship. Contacts shall be processed in such a manner as to be uniform in quality and shall be free from foreign material and burrs or sharp corners that might damage the connector or affect mating of the contacts. Burrs and sharp edges shall be removed 0.005 inch maximum.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 Test equipment and inspection facilities. Test and measuring equipment and inspection facilities of sufficient accuracy, quality and quantity to permit performance of the required inspection shall be established and maintained by the contractor. The establishment and maintenance of a calibration system to control the accuracy of the measuring and test equipment shall be in accordance with MIL-STD-45662.

4.1.2 Test report. The size, type and manufacturer's name and military part number of the connector used to qualify the contacts shall be included in the qualification test report.

4.2 Classification of inspection. The inspection requirements specified herein are classified as follows:

a. Qualification inspection (see 4.5).

b. Quality conformance inspection (see 4.6).

4.3 Inspection conditions. Unless otherwise specified herein, all inspection shall be performed in accordance with the ambient conditions specified in MIL-STD-1344.

4.3.1 New qualified products list (QPL) contacts and connectors. New contacts for new connectors that are undergoing qualification and not associated with any approved military specification connector must meet the required test conditions specified for that connector and its intended use. Both contact and connector shall meet the required test conditions of each contact and connector specification simultaneously.

4.3.2 Preparation of samples. Contacts shall be wired as required with the minimum and maximum wire sizes specified in Table III, except wire size 26 shall be the minimum wire used with contact sizes 22, 23 and 24 for test group II (See Table XII). Wire type shall be in accordance with MIL-W-16878, MIL-W-22759, or MIL-W-81381. Coaxial cable shall be as specified (see 3.1). The length of the strip portion of the conductor shall be at least long enough to reach the bottom of the crimp barrel; but shall not be so long that more than 1/32 inch of the conductor is exposed when the conductor touches the bottom of the barrel.

4.3.3 Certification of the manufacturer's capability to produce. Certification of the manufacturer's capability to produce the item should not be predicated on the submittal of a report but rather on representative samples of production parts selected at random by a representative of the qualifying activity. These parts, when successfully passing the qualification tests, should ultimately demonstrate the manufacturer's capability to produce the item.

4.4 Mated contacts. Mated contacts shall be tested in a suitable connector that has been approved for listing in the applicable qualified products list.

4.5 Qualification inspection. Qualification inspection shall be performed at a laboratory acceptable to the Government (see 6.3) on sample units produced with equipment and procedures normally used in production.

4.5.1 Sample size. Unless otherwise directed by the qualifying agency (see 6.3), test samples of contacts and bushings of each part number for which qualification is desired shall be selected at random in the quantities specified in Table XI. The quantity required for the applicable type shall be subjected to testing as specified in 4.5.2. The remaining untested samples shall be forwarded to the qualifying agent with the qualification test reports.

TABLE XI. Random sample quantities.

Type	Contact size	Number of sample units 1/				
		Pin contacts	Complete sockets	Socket bodies only 2/	Spares	
					Pin contacts	Complete sockets
A & B	10-10 and larger	18	16	2	18	18
A & B	12-12 and smaller	48	40	8	48	48
C	All	10	10	---	10	10
D 3/	All	48	40	8	48	48

1/ For other than pin or socket contacts, the male contact shall be considered as equivalent to the pin; the female contact shall be considered as equivalent to the socket. Sufficient connector assemblies containing type B contacts shall be supplied to satisfy the quantity specified. Type A contacts shall be provided as mating parts for type B contacts submitted for test. For hermaphroditic contacts, double the quantities listed for pins shall be submitted.

2/ The hoods and, when applicable, springs and insulators shall not be assembled to the socket.

3/ Additional inner and outer contacts may be used for the tensile strength tests.

4.5.2 Inspection routine.

4.5.2.1 Types A and B. Sample units shall be subjected to the qualification inspection specified in Table XII, in the order shown.

4.5.2.2 Type C. The contacts shall be submitted for qualification inspection specified in Table XIII, in the order shown.

4.5.2.3 Type D. Sample units shall be subjected to the qualification inspection specified in Table XIV, in the order shown.

4.5.3 Failure. One or more failures in any of the application examinations or tests shall be cause for refusal to grant qualification.

4.5.4 Retention of qualification. To retain qualification, the contractor shall forward a report at sampling intervals specified in 4.6.3.1.1 to the qualifying activity. The qualifying activity shall establish the initial reporting date. The report shall consist of:

a. A summary of the results of the tests performed for inspection of product for delivery, group A, indicating as a minimum the number of lots that have passed and the number of lots that have failed, shall be submitted every 12 months. The results of tests of all reworked lots shall be identified and accounted for.

b. The results of tests performed for periodic inspection group B, including the number and mode of failures, shall be reported. The test report shall include results of all periodic tests performed and completed during the sampling intervals of 4.6.3.1.1. If the test results indicate nonconformance with specification requirements, and corrective action acceptable to the qualifying activity has not been taken, action may be taken to remove the failing product from the qualified products list.

Failure to submit the report within 30 days after the end of each sampling interval may result in loss of qualification for the product. In addition to the periodic submission of inspection data, the supplier shall immediately notify the qualifying activity at any time during the sampling interval that the inspection data indicates failure of the qualified product to meet the requirements of this specification.

In the event that no production occurred during the reporting period, a report shall be submitted certifying that the company still has the capabilities and facilities necessary to produce the item. If during three consecutive reporting periods there has been no production, the manufacturer may be required, at the discretion of the qualifying activity, to submit a representative product of each part number to testing in accordance with the qualification inspection requirements.

TABLE XII. Qualification and group B inspection (types A and B contacts).

Inspection	Requirement paragraph 1/	Test paragraph	Number of sample units to be inspected					
					Max wire size		Min wire size	
			Size 12 and smaller	Size 10 and larger	Size 12 and smaller	Size 10 and larger	Size 12 and smaller	Size 10 and larger
Group I								
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1						
Permeability 2/	3.5.1	4.7.2						
Preparation of samples	---	4.3.2						
Examination-wired contacts	---	4.7.1.1						
Axial concentricity (wired)	3.5.2.2	4.7.3.2	8	4	6	3	2	1
Low signal contact resistance 2/	3.5.3.1	4.7.4						
Contact resistance (25°C)	3.5.4	4.7.5						
Contact engagement and separation force	3.5.5	4.7.6						
Thermal shock	3.5.6	4.7.7						
Contact engagement and separation force	3.5.5	4.7.6						
Resistance to test probe damage	3.5.7	4.7.8						
Contact engagement and separation force	3.5.5	4.7.6						
Contact resistance (25°C)	3.5.4	4.7.5						
Crimp tensile strength	3.5.8	4.7.9						
Group II								
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1						
Permeability 2/	3.5.1	4.7.2						
Preparation of samples	---	4.3.2						
Examination-wired contacts	---	4.7.1.1						
Axial concentricity (wired)	3.5.2.2	4.7.3.2						
Low signal level contact resistance 2/	3.5.3.1	4.7.4	8	4	6	3	2	1
Contact resistance (25°C)	3.5.4	4.7.5						
Contact engagement and separation force	3.5.5	4.7.6						
Durability	3.5.9	4.7.10						
Vibration 3/ 4/	3.5.10	4.7.11						
Shock (specified pulse) 3/ 4/	3.5.11	4.7.12						
Salt spray 5/	3.5.12	4.7.13						
Low signal level contact resistance 2/	3.5.3.1	4.7.4						
Contact resistance (25°C)	3.5.4	4.7.5						
Contact resistance (at high temperature)	3.5.4	4.7.5						
Contact engagement and separation force	3.5.5	4.7.6						
Group III								
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1						
Permeability 2/	3.5.1	4.7.2						
Preparation of samples	---	4.3.2						
Examination-wired contacts	---	4.7.1.1						
Axial concentricity (wired)	3.5.2.2	4.7.3.2						
Low signal level contact resistance 2/	3.5.3.1	4.7.4	8	4	6	3	2	1
Contact resistance (25°C)	3.5.4	4.7.5						
Contact engagement and separation force	3.5.5	4.7.6						
Temperature life 5/	3.5.13	4.7.14						
Low signal level contact resistance 2/	3.5.3.1	4.7.4						
Contact resistance (25°C)	3.5.4	4.7.5						
Contact resistance (at high temperature)	3.5.4	4.7.5						
Contact engagement and separation force	3.5.5	4.7.6						
Crimp tensile strength	3.5.8	4.7.9						

See footnotes at end of table.

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TABLE XII. Qualification and group B inspection (types A and B contacts) (continued).

Inspection	Requirement paragraph 1/	Test paragraph	Number of sample units to be inspected					
					Max wire size		Min wire size	
			Size 12 and smaller	Size 10 and larger	Size 12 and smaller	Size 10 and larger	Size 12 and smaller	Size 10 and larger
Group IV								
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1						
Permeability 2/	3.5.1	4.7.2						
Preparation of samples	---	4.3.2						
Examination-wired contacts	---	4.7.1.1						
Axial concentricity (wired)	3.5.2.2	4.7.3.2						
Low signal level contact resistance 2/	3.5.3.1	4.7.4	8	-	4	-	4	-
Contact resistance (size 12 only)	3.5.4.1	4.7.5						
Industrial gas 5/	3.5.14	4.7.15						
Contact resistance (size 12 only)	3.5.4.2	4.7.5						
Low signal level contact resistance 2/	3.5.3.1	4.7.4						
Contact strength 2/	3.5.15	4.7.16						
Group V 2/								
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1						
Permeability	3.5.1	4.7.2						
Axial concentricty (unwired)	3.5.2.1	4.7.3.1						
Preparation of samples	---	4.3.2	8	4	4	2	4	2
Examination-wired contacts	---	4.7.1.1						
Axial concentricity (wired)	3.5.2.2	4.7.3.2						
Crimp tensile strength	3.5.8	4.7.9						
Group VI 2/ 6/								
Examination of product	3.1, 3.3, 3.4, and 3.7	4.7.1	4	-	-	-	-	-
Plating porosity 5/	3.5.16	4.7.17						
Group VII 6/								
Examination of product	3.1, 3.3, 3.4, and 3.7	4.7.1	4	2	-	-	-	-
Plating thickness	3.5.17	4.7.18						
Group VIII 7/								
Examination of product								
Preparation of samples								
Examination-wired contacts								
Low signal level contact resistance			8	-	4	-	4	-
Contact resistance (25°C)								
Humidity-temperature cycling								
Low signal level contact resistance								
Contact resistance (25°C)								

1/ Individual requirements paragraphs may exempt certain sizes or types of contacts from some tests in the sequence.
2/ Type A only.
3/ Not applicable to wire barrel size 28 and smaller.
4/ Qualification only.
5/ Integrity of color code not required after test.
6/ When testing socket contacts, conduct tests prior to assembly of hoods and springs.
7/ For localized gold finished contacts only.

TABLE XIII. Qualification and group B inspection (type C contacts)

Group I	
Examination of product	8 samples for each subgroup all size 16 and smaller
Axial concentricity	
Preparation of samples	
Axial concentricity (wired)	
Contact engagement and separation force	
Vibration	
Shock (specified pulse)	
Contact engagement and separation force	
Group II	
Examination of product	
Axial concentricity	
Preparation of samples	
Axial concentricity (wired)	
Contact engagement and separation force	
Crimp tensile strength	

TABLE XIV. Qualification and group B inspection (type D contacts) (see 4.5.2.3).

Inspection	Requirement paragraph 1/	Test paragraph	Number of sample units to be inspected
Group I			
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1	
Permeability 2/	3.5.1	4.7.2	
Preparation of samples	---	4.3.2	
Examination-wired contacts	---	4.7.1.1	
Axial concentricity (wired)	3.5.2.2	4.7.3.2	8
Low signal level contact resistance 1/	3.5.3.2	4.7.4	
Contact resistance (25°C)	3.5.4.3	4.7.5	
Contact engagement and separation force	3.5.5	4.7.6	
Thermal shock	3.5.6	4.7.7	
Contact engagement and separation force	3.5.5	4.7.6	
Contact resistance (25°C)	3.5.4.3	4.7.5	
Insulation resistance (25°C)	3.5.18	4.7.19.1	
Group II			
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1	
Permeability	3.5.1	4.7.2	
Axial concentricity (unwired)	3.5.2.1	4.7.3.1	
Preparation of samples	---	4.3.2	
Examination-wired contacts	---	4.7.1.1	
Axial concentricity (wired)	3.5.2.2	4.7.3.2	
Low signal level contact resistance 1/	3.5.3.2	4.7.4	
Contact resistance (25°C)	3.5.4.3	4.7.5	
Contact engagement and separation force	3.5.5	4.7.6	
Durability	3.5.9	4.7.10	8
Vibration 2/	3.5.10	4.7.11	
Shock (specified pulse) 2/	3.5.11	4.7.12	
Salt spray 3/	3.5.12	4.7.13	
Low signal level contact resistance 1/	3.5.3.2	4.7.4	
Contact resistance (25°C)	3.5.4.3	4.7.5	
Contact resistance (at high temperature)	3.5.4.3	4.7.5	
Contact engagement and separation force	3.5.5	4.7.6	
Insulation resistance (25°C)	3.5.18	4.7.19.1	

See footnotes at end of table.

TABLE XIV. Qualification and group B inspection (type D contacts) (see 4.5.2.3) (continued).

Inspection	Requirement paragraph 1/	Test paragraph	Number of sample units to be inspected
Group III			
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1	
Permeability	3.5.1	4.7.2	
Preparation of samples	---	4.3.2	
Examination-wired contacts	---	4.7.1.1	
Axial concentricity (wired)	3.5.2.2	4.7.3.2	
Low signal level contact resistance 1/	3.5.3.2	4.7.4	
Contact resistance (25°C)	3.5.4.3	4.7.5	8
Contact engagement and separation force	3.5.5	4.7.6	
Temperature life 3/	3.5.13	4.7.14	
Insulation resistance (at high temperature)	3.5.18	4.7.19.2	
Low signal level contact resistance 1/	3.5.3.2	4.7.4	
Contact resistance (25°C)	3.5.4.3	4.7.5	
Contact resistance (at high temperature)	3.5.4.3	4.7.5	
Contact engagement and separation force	3.5.5	4.7.6	
Group IV			
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1	
Permeability	3.5.1	4.7.2	
Axial concentricity (unwired)	3.5.2.1	4.7.3.1	
Preparation of samples	---	4.3.2	
Examination-wired contacts	---	4.7.1.1	8
Axial concentricity (wired)	3.5.2.2	4.7.3.2	
Dielectric withstanding voltage	3.5.19	4.7.20	
Low signal level contact resistance 1/	3.5.3.2	4.7.4	
Industrial gas 3/	3.5.14	4.7.15	
Low signal level contact resistance 1/	3.5.3.2	4.7.4	
Group V			
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.7.1	
Permeability	3.5.1	4.7.2	8
Axial concentricity (unwired)	3.5.2.1	4.7.3.1	
Preparation of samples	---	4.3.2	
Examination-wired contacts	---	4.7.1.1	
Axial concentricity (wired)	3.5.2.2	4.7.3.2	
Crimp tensile strength	3.5.8	4.7.9	

See footnotes at end of table.

TABLE XIV. Qualification and group B inspection (type D contacts) (see 4.5.2.3) (continued).

Inspection	Requirement paragraph 1/	Test paragraph	Number of sample units to be inspected
Group VI			
Examination of product	3.1, 3.3, 3.4, and 3.7	4.7.1	4
Plating porosity 4/	3.5.16	4.7.17	
Group VII			
Examination of product	3.1, 3.3, 3.4, and 3.7	4.7.1	4
Plating thickness 4/	3.5.17	4.7.18	

1/ Inner contact only.
2/ Qualification only.
3/ Integrity of color code not required after test.
4/ Conduct test prior to assembly of shrouds, springs and insulators.

4.5.4.1 Contacts. For contacts, the test may be conducted during the regular scheduled connector testing for retention of qualification with the applicable connector undergoing retention of qualification.

4.5.5 Qualification by similarity. The extent of qualification testing by similarity shall be determined by the qualified products list evaluating activity.

4.6 Quality conformance inspection.

4.6.1 Inspection of product for delivery. Inspection of product for delivery shall consist of group A inspection.

4.6.1.1 Inspection lot. An inspection lot shall consist of all contacts of the same military part number produced under essentially the same conditions, and offered for inspection at one time.

4.6.2 Group A inspection. Group A inspection shall consist of the inspections specified in Table XV, in the order listed.

4.6.2.1 Sampling plan. Statistical sampling and inspection shall be in accordance with MIL-STD-105 for general inspection level II. The acceptable quality level (AQL) shall be as specified in Table XV. In-process controls, unrelated to lot size, may be used provided the equivalent or tighter AQL is maintained.

TABLE XV. Group A inspection.

Inspection	Requirement paragraph	Test paragraph	AQL	
			Major	Minor
Examination of product	3.1,3.3,3.4, 3.6 and 3.7	4.7.1	1.0	4.0
Contact engagement and separation forces: Size 16 and smaller: Engagement, maximum	3.5.5	4.7.6	1.0	N/A
Separation, minimum 1/			N/A	N/A
Size 12 and larger: Engagement, maximum			1.0	N/A
Separation, minimum			0.25	N/A
Resistance to test probe damage (types A and B) 2/	3.5.7	4.7.8	1.0	N/A
Contact engagement and separation forces (types A and B) 2/	3.5.5	4.7.6		
Plating thickness (types A, B and D)	3.5.17	4.7.18	3/	
Crimpability	3.5.20	4.7.21	4/	

1/ 100% inspection required.
2/ Sampling inspection shall be in accordance with MIL-STD-105, level S-3.
3/ Sampling inspection shall be in accordance with MIL-G-45204 or QQ-S-365, as applicable.
4/ Size 12 and larger - 5 contacts from each lot; size 16 and smaller - 10 contacts from each lot. No failures permitted.

4.6.2.2 Rejected lots. If an inspection lot is rejected, the contractor may rework it to correct the defects, or screen out the defective units, and resubmit for reinspection. Resubmitted lots shall be inspected using tightened inspection. Such lots shall be separate from new lots, and shall be clearly identified as reinspected lots.

4.6.2.3 Disposition of sample units. Sample units which have passed all the group A inspections may be delivered on the contract if the lot is accepted and the sample units are still within specified tolerance.

4.6.3 Periodic inspection. Periodic inspection shall consist of group B. Except where the results of these inspections show noncompliance with the applicable requirements (see 4.6.3.1.5), delivery of products which have passed group A shall not be delayed pending the results of these periodic inspections.

4.6.3.1 Group B inspection. Group B inspection shall consist of the examinations and tests specified in Tables XII, XIII or XIV, in the order shown. Group B inspection shall be made on test samples selected in the quantities specified in Table XI. Group B sample units shall be selected from inspection lots which have passed the group A inspection.

4.6.3.1.1 Sampling plan. Sample units of the same part number as presently qualified shall be selected and reported on every 24 months.

4.6.3.1.2 Failures. If one or more sample units fail to pass group B inspection, the sample shall be considered to have failed.

4.6.3.1.3 Rejected lots. If an inspection lot is rejected, the contractor may rework it to correct the defects, or screen out the defective units, and resubmit for reinspection. Resubmitted lots shall be inspected using tightened inspection. Such lots shall be separate from new lots, and shall be clearly identified as reinspected lots.

4.6.3.1.4 Disposition of sample units. Sample units which have been subjected to group B inspection shall not be delivered on the contract.

4.6.3.1.5 Noncompliance. If a sample fails to pass group B inspection, the manufacturer shall take corrective action on the materials or processes, or both, as warranted, and on all units of product which can be corrected and which were manufactured under essentially the same conditions, with essentially the same materials, processes, etc. and which are considered subject to the same failure. Acceptance of the product shall be discontinued until corrective action, acceptable to the Government, has been taken. After the corrective action has been taken, group B inspection shall be repeated on additional sample units (all inspection, or the inspection which the original sample failed, at the option of the Government). Group A inspection may be reinstituted; however, final acceptance shall be withheld until the group B reinspection has shown that corrective action was successful. In the event of failure after reinspection, information concerning the failure and corrective action taken shall be furnished to the cognizant inspection activity and the qualifying activity.

4.6.4 Inspection of packaging. The sampling and inspection of the preservation, packing and container marking shall be in accordance with the requirements of MIL-C-55330.

4.7 Methods of inspection.

4.7.1 Examination of product. Contacts, before and after wiring, shall be examined to ensure conformance with this specification. In-process controls of component parts, unrelated to lot sizes of finished contacts, may be utilized in lieu of examination of those components in the finished contacts to assure conformance of these component parts. Contacts shall be examined to verify that physical dimensions, materials, design, marking, contact crimping instructions and installing and removal tool data, and workmanship are in accordance with the applicable requirements (see 3.1, 3.3, 3.4, 3.6 and 3.7).

4.7.1.1 Wired contacts. After wiring, contacts shall be examined under a magnification of three diameters and shall exhibit no cracks in the basis metal or peeled plating.

4.7.2 Permeability (types A and D) (see 3.5.1). The permeability of the contact shall be measured with an indicator conforming to MIL-I-17214. Traceability of calibration of the instrument to the National Bureau of Standards is not required.

4.7.3 Axial concentricity (see 3.5.2). Removable contacts shall be chucked in the area shown on Figure 4 and rotated 360 degrees minimum. While the contact is rotated, the total indicator reading shall be measured as specified on Figure 4.

4.7.3.1 Unwired contacts (see 3.5.2.1). Removable contacts shall be chucked in the area shown on Figure 4 and rotated 360 degrees minimum. While the contact is rotated, the total indicator reading shall be measured at points A and B as shown on Figure 4.

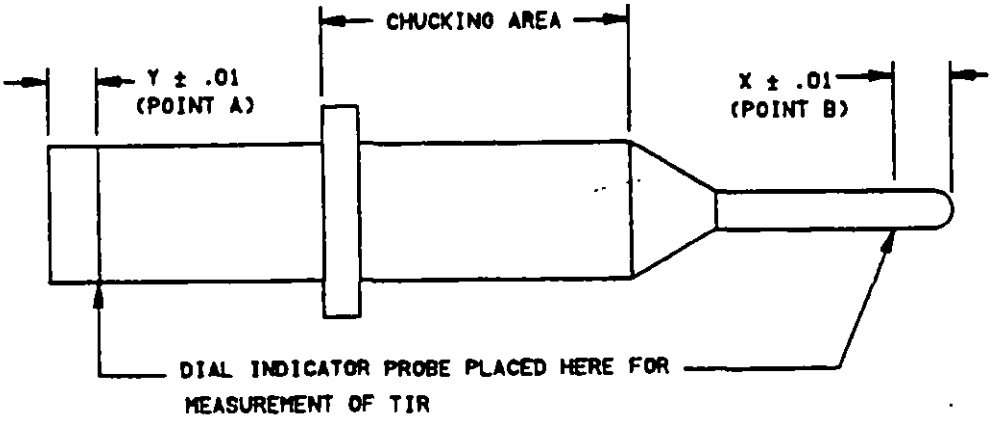
4.7.3.2 Wired contacts (see 3.5.2.2). After crimping to wire, contacts shall be chucked in the area shown on Figure 4 and rotated 360° minimum. While the contact is rotated, the total indicator reading shall be measured at point A as shown on Figure 4. Contacts which are end positioned in the crimping tool shall also be measured at point B as shown on Figure 4.

4.7.4 Low signal level contact resistance (types A and D) (see 3.5.3). The low signal level contact resistance of mated contact pairs shall be measured in accordance with Method 3002 of MIL-STD-1344 at 25°C ± 3°C with the pin contact engaged to a depth of .7L (see Figure 5).

4.7.5 Contact resistance (types A, B and D) (see 3.5.4). With the pin contact engaged for a depth of .7L (see Figure 5), the voltage drop of each mated pair shall be measured in accordance with Method 3004 of MIL-STD-1344 at 25°C ± 3°C or at maximum rated temperature, as applicable (see 3.1). Measurements shall be taken after the temperature of the contact has stabilized. Voltage drop measurement connection points may be permanent connections. The test current shall be as specified in Tables V and VI for type A and Tables VII and VIII for type B.

4.7.6 Contact engagement and separation force (socket contacts) (see 3.5.5). Sockets shall be mounted in a suitable fixture for applying gradually increasing loads for the engagement and separation of the specified MS3197 test pins and in accordance with Method 2014 of MIL-STD-1344. The test pins shall be inserted a minimum of .7L (see Figure 5). A maximum diameter test pin shall be inserted and removed from each socket contact. The engagement force shall be measured during insertion. A minimum diameter test pin shall be inserted and removed from each socket contact and the separation force shall be measured during removal. Special gage pins required for type D contacts shall be as specified (see 3.1).

4.7.7 Temperature cycling (types A, B and D) (see 3.5.6). Mated contacts shall be tested in accordance with Method 1003 of MIL-STD-1344. The following details and exception shall apply:



NOTES:
1. For size 12 and larger pins, X = 1 pin diameter and Y = .05 (1.27 mm).
2. For pins smaller than size 12, X = 2 pin diameters and Y = 1/2 the distance from the rear of the wire barrel to the beginning of the crimp indent.

FIGURE 4. Axial concentricity (TIR) measurement (typical).

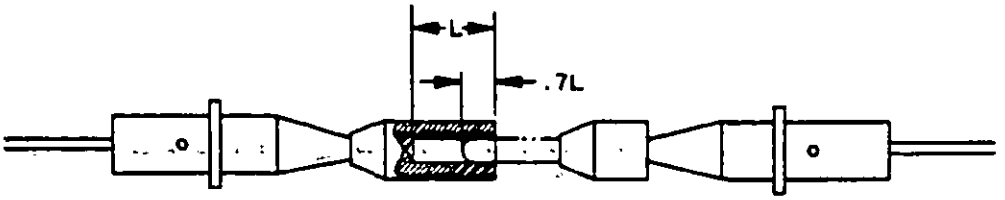


FIGURE 5. Depth of engagement for contact resistance and engagement and separation force tests.

a. Test condition A, except step 3 shall be the applicable maximum operating temperature (see 3.1).

b. Measurement before and after cycling - Not applicable.

4.7.8 Resistance to test probe damage (types A and B) (see 3.5.7). Contacts shall be tested for probe damage in accordance with Method 2006 of MIL-STD-1344. The following details and exceptions shall apply:

a. The diameter of the handle (.190 inch) does not apply.

b. Probe depth, dimension "B" shall be 1/2 and 3/4 of the specified minimum socket bore depth or as specified (see 3.1).

4.7.9 Crimp tensile strength (see 3.5.8). Crimped contact wire assemblies shall be subjected to tensile strength in accordance with Method 2003 of MIL-STD-1344. The following details shall apply:

a. Quantity: See Tables XII, XIII and XIV.

b. Identity of crimping tool: See 3.4.4.1.

c. Measurement: See Table X.

4.7.10 Durability (types A, B and D) (see 3.5.9). Contacts shall be installed in a qualified connector and shall be subjected to 500 cycles of mating and unmating at a rate of 300 cycles per hour maximum. The depth of the engagement shall not be less than 70 percent of the minimum bore depth (see Figure 5). The connector coupling devices may be removed for this test.

4.7.11 Vibration (see 3.5.10). Contacts shall be tested in accordance with Method 2005 of MIL-STD-1344. The following details shall apply:

a. Test condition VI, letter J, unless otherwise specified (see 3.1).

b. Test specimens - Contacts shall be mated and wired in series.

c. Duration of test shall be 8 hours in the longitudinal direction and 8 hours in a perpendicular direction for a total of 16 hours unless otherwise specified (see 3.1).

4.7.12 Shock (specified pulse) (see 3.5.11). Contacts shall be tested in accordance with Method 2004 of MIL-STD-1344. The following details shall apply:

a. Test condition D, unless otherwise specified (see 3.1).

b. Test specimens - Contacts shall be mated and wired in series.

4.7.13 Salt spray (corrosion) (types A, B and D) (see 3.5.12). Mated contacts shall be tested in accordance with Method 1001 of MIL-STD-1344. The following detail and exception shall apply: test condition B, 48 hours. Immediately after exposure, contacts shall be washed and then dried in a circulating air oven at a temperature of 38°C ± 3°C for 24 hours, maximum.

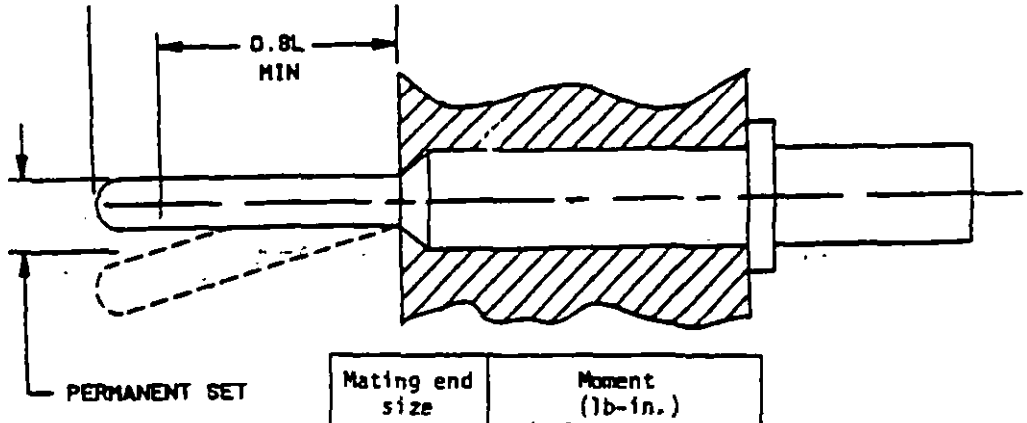
4.7.14 Temperature life (types A, B and D) (see 3.5.13). Mated contacts shall be subjected to their maximum specified operating temperature (see 3.1), as applicable, for 1,000 hours.

4.7.15 Industrial gas (types A, B and D) (see 3.5.14). Unmated contacts shall be placed on a noncorrosive rack in a closed plastic or glass chamber (volume two cubic feet maximum) which contains a 10-percent solution of suphurated potash NF in distilled water. Contacts shall not be immersed in the solution but shall be exposed to the sulfide vapor for 100 hours.

4.7.16 Contact strength (mating end size 20 and smaller pin contacts, type A) (see 3.5.15). Contacts shall be mounted in a suitable fixture and a gradual load applied to the pin as shown in Figure 6. The rate of travel of the testing machine shall not exceed one inch per minute, and the load shall be maintained for one minute, +15, -0 seconds.

The permanent set shall be the difference between the initial and final position of the point of load application after load removal.

4.7.17 Overall gold-finish porosity (types A and D overall gold-plated finish only) (see 3.5.16). Contacts shall be placed in containers and covered with nitric acid (specific gravity 1.316 at 15.6°C) at 25°C + 3°C so that all contacts may be observed during the test. The contacts shall be observed for 30 seconds.



Mating end size	Moment (lb-in.) (unless otherwise specified (see 3.1)
20	.53
22	.22
23	.16
24	.13

FIGURE 6. Contact strength (typical).

4.7.18 Finish thickness (types A, B and D) (see 3.5.17).

4.7.18.1 Overall finish (types A, B and D) (see 3.3.2). Finish thickness shall be measured in accordance with MIL-G-45204 or QQ-S-365, as applicable, for the finish to be measured. Measurements shall be made on the external surfaces of the contact body at the locations shown on Figure 7. Inner and outer contacts of type D contacts shall also be measured at these locations.

4.7.18.2 Localized finish (types A, B and D) (see 3.3.2.2.1 and 3.3.2.2.2). Finish thickness shall be measured in accordance with MIL-G-45204. Types A and B contacts and inner contacts of type D contacts shall be measured at point B or C of Figure 8, as applicable. Outer contacts of type D contacts shall be measured at point B or C of Figure 9, as applicable.

4.7.19 Insulation resistance (type D) (see 3.5.18). Insulation resistance shall be measured between the crimped outer contact and the inner contact as specified in 4.7.19.1 and 4.7.19.2.

4.7.19.1 Ambient temperature. Unmated contacts shall be tested in accordance with Method 3003 of MIL-STD-1344.

4.7.19.2 Elevated temperature. Unmated contacts shall be tested in accordance with Method 3003 of MIL-STD-1344 at the end of exposure for 1,000 hours to the maximum operating temperature specified (see 3.1).

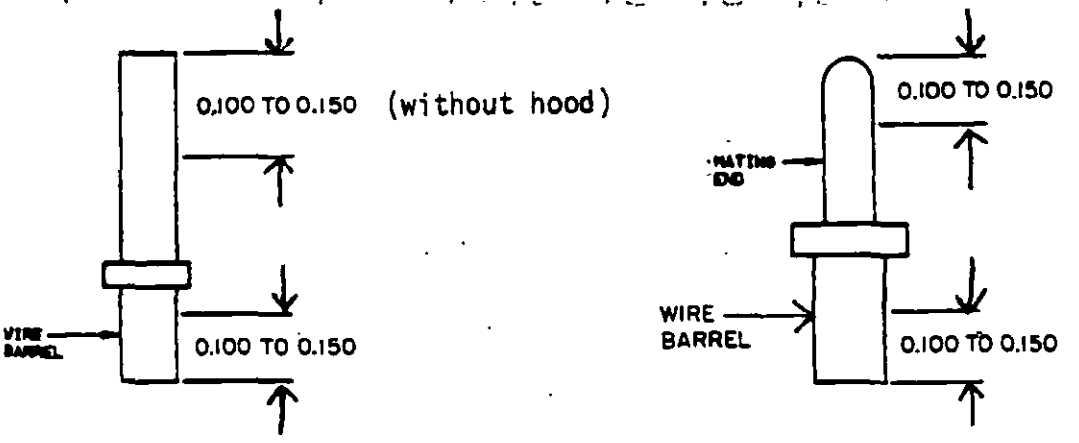
4.7.20 Dielectric withstanding voltage (type D) (see 3.5.19). Test voltages shall be applied between the crimped outer contact and the inner contact as specified in 4.7.20.1 and 4.7.20.2.

4.7.20.1 Sea level. Mated and unmated contacts shall be tested in accordance with Method 3001 of MIL-STD-1344.

4.7.20.2 Altitude. Mated contacts shall be tested in accordance with Method 3001 of MIL-STD-1344 at the altitude specified (see 3.1).

4.7.21 Crimpability (see 3.5.20). The contacts shall be wired (see 4.3.2) and subjected to visual examination (see 4.7.1.1) and crimp tensile strength (see 4.7.9) tests. In-process control may be used in lieu of these tests to verify crimpability. Controls shall include verification of raw material properties and, if required, secondary processes, such as heat treat and annealing. The process-control plan and records of its implementation shall be available to the responsible qualifying agency for verification.

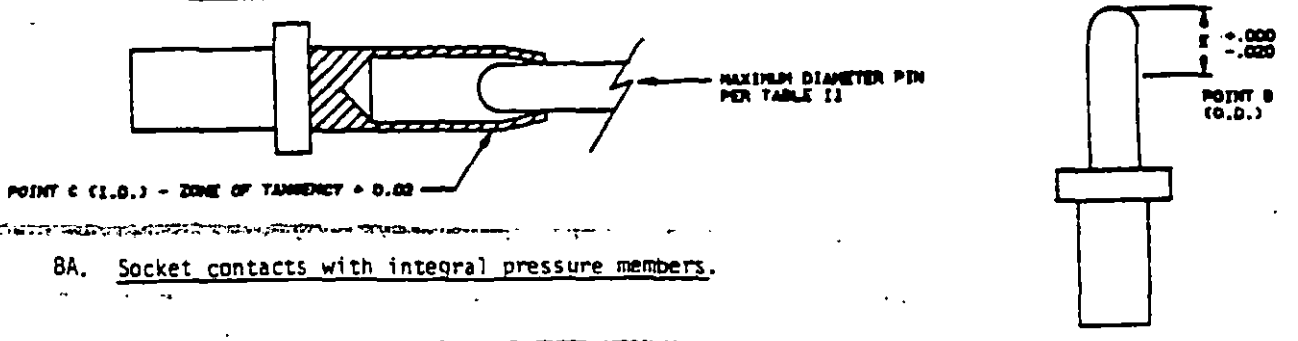
4.7.22 Humidity-temperature cycling (localized gold-finished contacts only) (see 3.5.21). Wired mated contacts shall meet the requirements of 3.5.21 when tested in accordance with Method 1002 of MIL-STD-1344, type II, test condition A. Current applied to contacts during exposure shall be 100 ± 10 milliamps.



7A. Socket contacts.

7B. Pin contacts.

FIGURE 7. Plating thickness measurement - overall finish (types A, B and D).



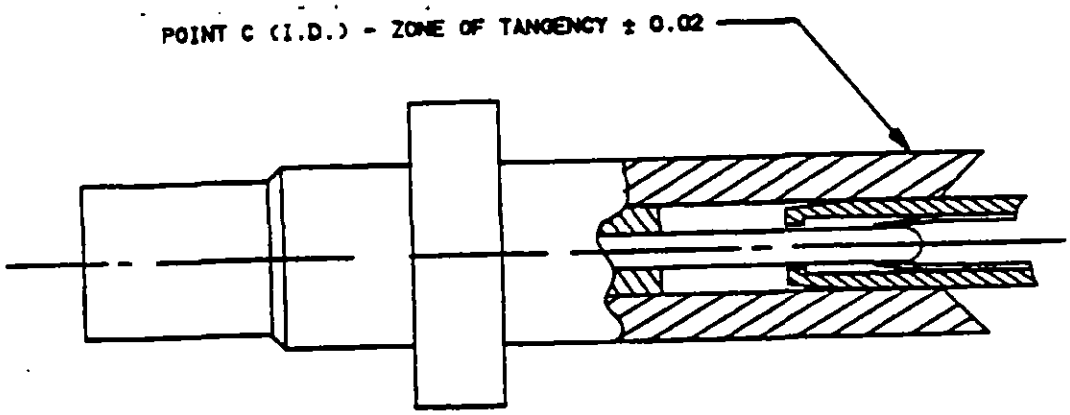
8A. Socket contacts with integral pressure members.

8C. Pin contacts.

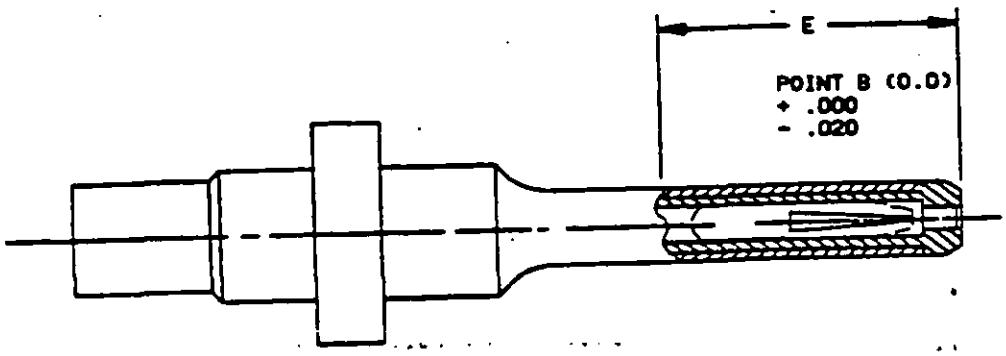
8B. Socket contacts with separate pressure members.

NOTES:
1. Dimensions are in inches.
2. For dimensions E and F, see Appendix.
3. F equals length of maximum electrical contact (wiping) area plugs .020 (0.51 mm) minimum. Maximum wipe shall be equal to maximum E of mating pin engagement minus the spherical radius.

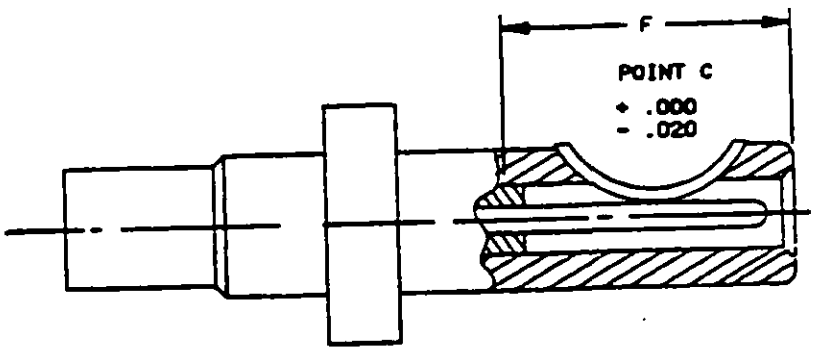
FIGURE 8. Plating thickness measurement - localized finish.



9A. Socket contact - outer with integral pressure are members.
Pin contact - inner (see FIGURE 8).



9B. Pin contact - outer
Socket contact - inner (see FIGURE 8).



9C. Socket contact - outer with separate pressure members.
Pin contact - inner (see FIGURE 8).

NOTES:
1. Dimensions are in inches.
2. For dimensions E and F see appendix.
3. F = Length of maximum electrical contact (wiping) plus .020 (0.51 mm) minimum. Wipe shall be equal to maximum E or mating pin engagement minus the chamfer.

FIGURE 9. Plating thickness measurement (localized finish) (type D outer contact).

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-C-55330.

In addition to the marking requirements specified in MIL-C-55330, the identification marking of each unit pack shall include the present and superseded part number (see 3.6.3).

6. NOTES

6.1 Intended use. Contacts covered by this specification are primarily intended for use in multicontact connectors where the coupling means is provided separately from the individual contact. Specific application and mating contacts will be included for information in the specification sheets. Contacts that are an integral part of the connector are not intended to be qualified to this specification; however, these contacts may be tested as required (see 3.1).

6.1.1 Type B. Test currents (see Table VII and VIII) for type B are reduced the equivalent of one full wire size rating to compensate for inherent increased resistivity of these contacts. The use of full test current (see Tables V and VI) on these contacts may result in overheating.

6.1.2 Type D (shielded contacts). Type D contacts are coaxial contacts for use in multicontact connectors. These contacts are for use to shield the circuit from unwanted interference (RFI and EMI). These contacts are not impedance mated and, therefore, are not recommended for RF use.

6.2 Ordering data. Acquisition documents should specify the following:

a. Title, number and date of the specification.

b. Title, number and date of the applicable specification sheets (see 3.1) and complete part number (see 1.2.1).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are at the time set for opening of bids, qualified for inclusion in the applicable Qualified Products List (QPL) whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts for the products covered by this specification. The activity responsible for the Qualified Products List is the Naval Air Systems Command; however, information pertaining to qualification of products may be obtained from the applicable evaluating activity.

6.3.1 Evaluating activity. The activity responsible for evaluating the qualification test reports is listed on the applicable specification sheets (see 3.1). The evaluating activity will notify the prospective supplier as to

where the test reports are to be forwarded. The evaluating activity is responsible for notifying the prospective contractor that the test report was acceptable.

6.3.2 Requalification. Requalification to this revision is required of any manufacturer electing to invoke localized finish (see 3.3.2).

6.3.3 Provisions governing qualification. Copies of specifications and SD-6 "Provisions Governing Qualification" may be obtained upon application to Commanding Officer, Naval Publication and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

6.4 BIN color bands. Color bands are intended for identification of contacts before they are installed in the connector and prior to contact crimping.

6.5 Supersession data. This specification supersedes MIL-C-23216C(NAVY), MIL-C-26636A(USAF) and connector contact specification sheets in connector specifications MIL-C-22992, MIL-C-24308, MIL-C-28748, MIL-C-38999, MIL-C-83723, MIL-C-83733 (see appendix for superseded connector contact part numbers, MS numbers and superseded MIL-C-39029 part numbers).

6.6 International standardization agreements. Certain contacts of this standard, identified by NLPR 57, are the subject of the related international standardization agreements listed under "International Interest." When revision or cancellation of this specification is proposed which will effect or violate the international agreement concerned, the preparing activity will take appropriate reconciliation action through international standardization channels, including Departmental Standardization Offices, if required.

6.7 Definitions. The following definitions apply:

a. Overall finish (see 3.3.2.1, 3.5.17 and 4.7.18). A finish having a specified minimum thickness applied (i.e., barrel plating techniques, non-selective types, etc.) on all external plating surface diameters except for corners, which assures the specified performance of the contact. All other surfaces shall be plated to a thickness that assures specified performance of the contact.

b. Localized finish. A finish having a specified minimum thickness applied to a defined area (e.g., clad, inlay, welded dot, selective plating technique, etc.) (see 3.3.2.2, 3.5.17, 4.7.18 and the appendix).

c. Maximum operating temperature. Highest rated temperature as specified in the applicable associated specification (listed in the appendix).

6.8 Contacts with 28 and smaller wire. Contacts with 28 and smaller wire are not for use in random vibration and shock application.

6.9 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

6.10 Cross references. Cross references for contact type, connector specification and contact size to specification sheet are provided in MIL-STD-1646.

6.11 Subject term (key word) listing.

Basic identification number (BIN)
Bushing
Connector
Contact
Crimp
Engagement
Localized finish
Mating
Overall finish
Pin
Resistance
Socket
Solder
Solderless wrap
Tensile
Underplate
Wire
Wire barrel

Custodians:
Army - CR
Navy - AS
Air Force - 85

Review activities:
Army - AR, MI
Navy - EC, SH, MC
Air Force - 99
DLA - ES

User activities:
Army -
Navy - OS
Air Force - 11

Preparing activity:
Navy - AS
(Project No. 5935-3673)

Contact summary

BIN code 1/	Color bands  1st	2nd	3rd	Military part number M39029/	Pin or socket	Power contacts: Mating end size	Power contacts: Wire barrel size	Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E (inch)	F (inch)
100	Brown	Black	Black	1-100	P	16	22	--	M39029/1-16-22	MIL-T-81714 (series 1)	.152	--
101	"	"	Brown	1-101	"	16	20	--	M39029/1-16-20	"	.152	--
102	"	"	Red	1-102	"	14	16	--	M39029/1-14-16	"	.167	--
103	"	"	Orange	1-103	"	12	12	--	M39029/1-12-12	"	.117	--
104	"	"	Yellow	2-104	"	22	22	--	M39029/2-22-22	MIL-C-81659 (series 1)	.380	--
105	"	"	Green	2-105	"	20	20	--	M39029/2-20-20	"	.380	--
106	"	"	Blue	2-106	"	16	16	--	M39029/2-16-16	"	.380	--
107	"	"	Violet	3-107	S	22	22	--	M39029/3-22-22	"	--	.380
108	"	"	Gray	3-108	"	20	20	--	M39029/3-20-20	"	--	.380
109	"	"	White	3-109	"	16	16	--	M39029/3-16-16	"	--	.500
110	"	Brown	Black	4-110	P	20	20	--	M39029/4-20-20 M83723/33B20	MIL-C-26482 (series 2) MIL-C-81703 (series 3) MIL-C-83723 (series 3) MIL-C-83733	.290	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
111	Brown	Brown	Brown	4-111	P	16	16	--	M39029/4-16-16 M83723/33B1G	MIL-C-26482 (series 2) MIL-C-81703 (series 3) MIL-C-83723 (series 3) MIL-C-83733	.290	--
112	"	"	Red	4-112	"	16	20	---	M39029/4-16-20	"	.290	--
113	"	"	Orange	4-113	"	12	12	--	M39029/4-12-12 M83723/33B12	"	--	--
114	"	"	Yellow	4-114	"	12	16	--	M39029/4-12-16	"	--	--
115	"	"	Green	5-115	S	20	20	--	M39029/5-20-20 M83723-34B20	"	--	.290
116	"	"	Blue	5-116	"	16	16	--	M39029/5-16-16 M83723-34B16	"	--	.290
117	"	"	Violet	5-117	"	16	20	--	M39029/5-16-20	MIL-C-26482 (series 2) MIL-C-81703 (series 3)	--	.290

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
118	Brown	Brown	Gray	5-118	S	12	12	---	M39029/5-12-12 M83723/34B12	MIL-C-26482 (series 2) MIL-C-81703 (series 3) MIL-C-83723 (series 1 & 3)	--	--
119	"	"	White	5-119	"	12	16	--	M39029/5-12-16	MIL-C-26482 (series 2) MIL-C-81703 (series 3) MIL-C-83723 (series 3) MIL-C-83733	--	--
120	"	Red	Black	6-120	P	--	--	16	M39029/6-01	MIL-C-81511 (series 1 & 2)	.210 3/	.154 3/
121	"	"	Brown	6-121	"	--	--	12	M39029/6-02	"	.210 3/	.154 3/
122	"	"	Red	6-122	"	--	--	12	M39029/6-03	"	.210 3/	.154 3/
123	"	"	Orange	6-123	"	--	--	12	M39029/6-04	"	.210 3/	.154 3/
124	"	"	Yellow	6-124	"	--	--	12	M39029/6-05	"	.210 3/	.154 3/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
125	Brown	Red	Green	6-125	P	--	--	12	M39029/6-06	MIL-C-81511 (series 1 & 2)	.210 3/	.154 3/
126	"	"	Blue	7-126	"	--	--	12	M39029/7-001	MIL-C-26482 (series 2) MIL-C-81703 (series 3)	.440 3/	.280 3/
127	"	"	Violet	7-127	"	--	--	--	M39029/7-002	"	.440 3/	.280 3/
128	"	"	Gray	7-128	"	--	--	--	M39029/7-003	"	.440 3/	.280 3/
129	"	"	White	8-129	S	--	--	--	M39029/8-001	"	.280 4/	.440 4/
130	"	Orange	Black	8-130	"	--	--	--	M39029/8-002	"	.280 4/	.440 4/
131	"	"	Brown	8-131	"	--	--	--	M39029/8-003	"	.280 4/	.440 4/
132	"	"	Red	9-132	P	20	20	--	M39029/9-20-20-C1	MIL-C-26482 (series 2) MIL-C-81703 (series 3) MIL-C-83723 (series 3) MIL-C-83733	.380	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
133	Brown	Orange	Orange	9-133	P	20	20	--	M39029/9-20-20-C2	MIL-C-26482 (series 2) MIL-C-81703 (series 3) MIL-C-83723 (series 3) MIL-C-83733	.380	--
134	"	"	Yellow	9-134	"	20	20	--	M39029/9-20-20-C3	"	.380	--
135	"	"	Green	9-135	"	20	20	--	M39029/9-20-20-C4	"	.380	--
136	"	"	Blue	9-136	"	20	20	--	M39029/9-20-20-C5	"	.380	--
138	"	"	Gray	10-138	S	20	20	--	M39029/10-20-20-C1	MIL-C-26482 (series 2)	--	.290
139	"	"	White	10-139	"	20	20	--	M39029/10-20-20-C2	MIL-C-81703 (series 3)	--	.290
140	"	Yellow	Black	10-140	"	20	20	--	M39029/10-20-20-C3	MIL-C-83723 (series 2)	--	.290
141	"	"	Brown	10-141	"	20	20	--	M39029/10-20-20-C4	MIL-C-83733	--	.290
142	"	"	Red	10-142	"	20	20	--	M39029/10-20-20-C5		--	.290
144	"	"	Yellow	11-144	P	22	22	--	M39029/11-22-22	MIL-C-81659 (series 2)	.266	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
145	Brown	Yellow	Green	11-145	P	20	20	--	M39029/11-20-20	MIL-C-81659 (series 2)	.321	--
146	"	"	Blue	11-146	"	16	16	--	M39029/11-16-16	"	.413	--
147	"	"	Violet	11-147	"	12	12	--	M39029/11-12-12	"	--	--
148	"	"	Gray	12-148	S	22	22	--	M39029/12-22-22	"	--	.266
149	"	"	White	12-149	"	20	20	--	M39029/12-20-20	"	--	.321
150	"	Green	Black	12-150	"	16	16	--	M39029/12-16-16	"	--	.413
151	"	"	Brown	12-151	"	12	12	--	M39029/12-12-12	"	--	--
152	"	"	Red	13-152	"	--	--	16	M39029/13-01	MIL-C-81511 (series 1)	.160 4/	.210 4/
153	"	"	Orange	13-153	"	--	--	12	M39029/13-02	"	.160 4/	.210 4/
154	"	"	Yellow	13-154	"	--	--	12	M39029/13-03	"	.160 4/	.210 4/
155	"	"	Green	13-155	"	--	--	12	M39029/13-04	"	.160 4/	.210 4/
156	"	"	Blue	13-156	"	--	--	12	M39029/13-05	"	.160 4/	.210 4/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
157	Brown	Green	Violet	13-157	S	--	--	12	M39029/13-06	MIL-C-81511 (series 1)	.160 4/	.210 4/
158	"	"	Gray	14-158	"	--	--	16	M39029/14-01	"	.160 4/	.210 4/
159	"	"	White	14-159	"	--	--	12	M39029/14-02	"	.160 4/	.210 4/
160	"	Blue	Black	14-160	"	--	--	12	M39029/14-03	"	.160 4/	.210 4/
161	"	"	Brown	14-161	"	--	--	12	M39029/14-04	"	.160 4/	.210 4/
162	"	"	Red	14-162	"	--	--	12	M39029/14-05	"	.160 4/	.210 4/
163	"	"	Orange	14-163	"	--	--	12	M39029/14-06	"	.160 4/	.210 4/
166	"	"	Blue	16-166	"	23	28	--	M39029/16-23-28	MIL-C-81511 (series 4)	--	.190
167	"	"	Violet	16-167	"	23	22	--	M39029/16-23-22	"	--	.190
168	"	"	Gray	16-168	"	20	20	---	M39029/16-20-20	"	--	.190
169	"	"	White	16-169	"	16	16	--	M39029/16-16-16	"	--	.190

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
170	Brown	Violet	Black	16-170	S	12	12	--	M39029/16-12-12	MIL-C-81511 (series 4)	--	--
171	"	"	Brown	17-171	"	23	28	--	M39029/17-23-28	MIL-C-81511 (series 3)	--	.190
172	"	"	Red	17-172	"	23	22	--	M39029/17-23-22	"	--	.190
173	"	"	Orange	17-173	"	20	20	--	M39029/17-20-20	"	--	.190
174	"	"	Yellow	17-174	"	16	16	--	M39029/17-16-16	"	--	.190
175	"	"	Green	17-175	"	12	12	--	M39029/17-12-12	"	--	--
176	"	"	Blue	18-176	P	23	28	--	M39029/18-23-28	MIL-C-81511 (series 3 & 4)	.190	--
177	"	"	Violet	18-177	"	23	22	--	M39029/18-23-22	"	.190	--
178	"	"	Gray	18-178	"	20	20	--	M39029/18-20-20	"	.190	--
179	"	"	White	18-179	"	16	16	--	M39029/18-16-16	"	--	--
180	"	Gray	Black	18-180	"	12	12	--	M39029/18-12-12	"	.240 3/	.205 3/
181	"	"	Brown	19-181	"	--	--	16	M39029/19-01	"	.225 3/	.205 3/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
182	Brown	Gray	Red	19-182	P	--	--	12	M39029/19-02	MIL-C-81511 (series 3 & 4)	.225 3/	.205 3/
183	"	"	Orange	20-183	"	--	--	12	M39029/19-03	"	.225 3/	.205 3/
184	"	"	Yellow	20-184	S	--	--	16	M39029/20-01	MIL-C-81511 (series 3)	.195 4/	.240 4/
185	"	"	Green	20-185	"	--	--	12	M39029/20-02	"	.180 4/	.240 4/
186	"	"	Blue	20-186	"	--	--	12	M39029/20-03	"	.180 4/	.240 4/
187	"	"	Violet	21-187	"	--	--	16	M39029/21-01	MIL-C-81511 (series 4)	.195 4/	.240 4/
188	"	"	Gray	21-188	"	--	--	12	M39029/21-02	"	.180 4/	.140 4/
189	"	"	White	21-189	"	--	--	12	M39029/21-03	"	.180 4/	.240 4/
190	"	White	Black	22-190	"	22	28	--	M39029/22-22-28 M39029/15-22-28	MIL-T-81714 (series 2) & MIL-C-81511 (series 3 & 4, class L)	--	.110

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
191	Brown	White	Brown	22-191	S	22	22	--	M39029/15-22-22 M39029/22-22-22	MIL-T-81714 (series 2) & MIL-C-81511 (series 3 & 4, class L)	--	.110
192	"	"	Red	22-192	"	20	20	--	M39029/22-20-20	"	--	.110
193	"	"	Orange	22-193	"	16	16	--	M39029/22-16-16	"	--	.110
194	"	"	Yellow	23-194	P	--	--	8	M39029/23-01	MIL-C-26482 (series 1)	.292 1/	.196 3/
195	"	"	Green	23-195	"	--	--	8	M39029/23-02	"	.292 3/	.196 3/
196	"	"	Blue	23-196	"	--	--	8	M39029/23-03	"	.292 3/	.196 3/
197	"	"	Violet	23-197	"	--	--	8	M39029/23-04	"	.292 3/	.196 3/
198	"	"	Gray	23-198	"	--	--	8	M39029/23-05	"	.292 3/	.196 3/
199	"	"	White	24-199	S	--	--	8	M39029/24-01	"	.196 4/	.292 4/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
200	Red	Black	Black	24-200	S	--	--	8	M39029/24-02	MIL-C-26482 (series I)	.196 4/	.292 4/
201	"	"	Brown	24-201	"	--	--	8	M39029/24-03	"	.196 4/	.292 4/
202	"	"	Red	24-202	"	--	--	8	M39029/24-04	"	.196 4/	.292 4/
203	"	"	Orange	24-203	"	--	--	8	M39029/24-05	"	.196 4/	.292 4/
204	"	"	Yellow	25-204	P	--	--	12	M39029/25-01	"	.235 3/	.235 3/
205	"	"	Green	25-205	"	--	--	12	M39029/25-02	"	.235 2/	.235 2/
206	"	"	Blue	25-206	"	--	--	12	M39029/25-03	"	.235 3/	.235 3/
207	"	"	Violet	26-207	S	--	--	12	M39029/26-01	"	.235 3/	.235 3/
208	"	"	Gray	26-208	"	--	--	12	M39029/26-02	"	.235 4/	.235 4/
209	"	"	White	26-209	"	--	--	12	M39029/26-03	"	.235 4/	.235 4/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
210	Red	Brown	Black	27-210	S	--	--	12	M39029/27-12A	MIL-C-38999 (series II)	.166 4/	.166 4/
211	"	"	Brown	28-211	P	--	--	12	M39029/28-12A	"	.166 3/	.166 3/
212	"	"	Red	29-212	"	16	16	--	M39029/29-16-16 MS3162-16-16 MS83723-29T16	MIL-C-5015 (MS3450) MIL-C-83723 (series 2)	.430	--
213	"	"	Orange	29-213	"	12	12	--	M39029/29-12-12 MS3162-12-12 MS83723-29T12	"	--	--
214	"	"	Yellow	29-214	"	8	8	--	M39029/29-8-8 MS3162-8-8 MS83723-29T8	"	--	--
215	"	"	Green	29-215	"	4	4	--	M39029/29-4-4 MS3162-4-4 M83723-29T4	"	--	--
216	"	"	Blue	29-216	"	0	0	--	M39029/29-0-0 MS3162-0-0 M83723-29T0	"	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
217	Red	Brown	Violet	30-217	S	16S	16	--	M39029/30-16S-16 MS3163-16S-16 M83723-30T17	MIL-C-5015 (MS3450) MIL-C-83723 (series 2)	--	.399
218	"	"	Gray	30-218	"	16	16	--	M39029/30-16-16 MS3163-16-16 M83723-30T16	"	--	.430
219	"	"	White	30-219	"	12	12	--	M39029/30-12-12 MS3163-12-12 M83723-30T12	"	--	--
220	"	Red	Black	30-220	"	8	8	--	M39029/30-8-8 MS3163-8-8 M83723-30T8	"	--	--
221	"	"	Brown	30-221	"	4	4	--	M39029/30-4-4 MS3163-4-4 M83723-30T4	"	--	--
222	"	"	Red	30-222	"	0	0	--	M39029/30-0-0 MS3163-0-0 M83723-30T0	"	--	--
223	"	"	Orange	31-223	P	20	20	--	MS3192-20-20A	MIL-C-26482 (series 1)	.290	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
224	Red	Red	Yellow	31-224	P	20	20	--	MS3192-20-20B	MIL-C-26482 (series 1)	--	--
225	"	"	Green	31-225	"	20	20	--	MS3192-20-20C1	"	--	--
226	"	"	Blue	31-226	"	20	20	--	MS3192-20-20C2	"	--	--
227	"	"	Violet	31-227	"	20	20	--	MS3192-20-20C3	"	--	--
228	"	"	Gray	31-228	"	16	16	--	MS3192-16-16-A	"	.290	--
229	"	"	White	31-229	"	16	16	--	MS24254-16P	MIL-C-26482 (series 1) MIL-C-26500	.290	--
230	"	Orange	Black	31-230	"	16	16	--	MS3192-16-16B	MIL-C-26482 (series 1)	--	--
231	"	"	Brown	31-231	"	16	16	--	MS3192-16-16C1	"	--	--
232	"	"	Red	31-232	"	16	16	--	MS3192-16-16C2	"	--	--
233	"	"	Orange	31-233	"	16	16	--	MS3192-16-16C3	"	--	--
234	"	"	Yellow	31-234	"	12	12	--	MS3192-12-12A	"	--	--
235	"	"	Green	31-235	"	12	12	--	MS24254-12-12P	MIL-C-26482 (series 1) MIL-C-26500	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
236	Red	Orange	Blue	31-236	P	12	12	--	MS3192-12-12B	MIL-C-26482 (series 1)	--	--
237	"	"	Violet	31-237	"	12	12	--	MS3192-12-12C1	"	--	--
238	"	"	Gray	31-238	"	12	12	--	MS3192-12-12C2	"	--	--
239	"	"	White	31-239	"	12	12	--	MS3192-12-12C3	"	--	--
240	"	Yellow	Black	31-240	"	20	20	--	MS3192A20-20A	"	.290	--
241	"	"	Brown	31-241	"	20	20	--	MS24254-20P	MIL-C-26500 MIL-C-26482 (series 1)	.290	--
242	"	"	Red	32-242	S	20	20	--	MS3193-20-20A	MIL-C-26482 (series 1)	--	.290
243	"	"	Orange	32-243	"	20	20	--	MS3193-20-20B	"	--	--
244	"	"	Yellow	32-244	"	20	20	--	MS3193-20-20C1	"	--	--
245	"	"	Green	32-245	"	20	20	--	MS3193-20-20C2	"	--	--
246	"	"	Blue	32-246	"	20	20	--	MS3193-20-20C3	"	--	--
247	"	"	Violet	32-247	"	16	16	--	MS319316-16A	"	--	.290
248	"	"	Gray	32-248	"	16	16	--	MS24255-16S	MIL-C-26482 (series 1) MIL-C-26500	--	.290

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
249	Red	Yellow	White	32-249	S	16	16	--	MS3193-16-16B	MIL-C-26482 (series 1)	--	--
250	"	Green	Black	32-250	"	16	16	--	MS3193-16-16C1	"	--	--
251	"	"	Brown	32-251	"	16	16	--	MS3193-16-16C2	"	--	--
252	"	"	Red	32-252	"	16	16	--	MS3193-16-16C3	"	--	--
253	"	"	Orange	32-253	"	12	12	--	MS3193-12-12A	"	--	--
254	"	"	Yellow	32-254	"	12	12	--	MS24255-12S	MIL-C-26482 (series 1) MIL-C-26500	--	--
255	"	"	Green	32-255	"	12	12	--	MS3193-12-12B	MIL-C-26482 (series 1)	--	--
256	"	"	Blue	32-256	"	12	12	--	MS3193-12-12C1	"	--	--
257	"	"	Violet	32-257	"	12	12	--	MS3193-12-12C2	"	--	--
258	"	"	Gray	32-258	"	12	12	--	MS3193-12-12C3	"	--	--
259	"	"	White	32-259	"	20	20	--	MS3193A-20-20A	"	--	.290
260	"	Blue	Black	32-260	"	20	20	--	MS2455-20S	MIL-C-26482 (series 1) MIL-C-26500	--	.290
261	"	"	Brown	33-261	"	23	28	--	MS3343A23-28	MIL-C-81511 (series 1)	--	.170

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire-barrel size					
262	Red	Blue	Red	33-262	S	23	28	--	MS3343B23-28	MIL-C-81511 (series 1)	--	.170
263	"	"	Orange	33-263	"	23	22	--	MS3343A23-22	"	--	.170
264	"	"	Yellow	33-264	"	23	22	--	MS3343B23-22	"	--	.170
265	"	"	Green	33-265	"	20	20	--	MS3343A20-20	"	--	.270
266	"	"	Blue	33-266	"	20	20	--	MS3343B20-20	"	--	.270
267	"	"	Violet	33-267	"	16	16	--	MS3343A16-16	"	--	.270
268	"	"	Gray	33-268	"	16	16	--	MS3343B16-16	"	--	.270
269	"	"	White	33-269	"	12	12	--	MS3343A12-12	"	--	--
270	"	Violet	Black	33-270	"	12	12	--	MS3343B12-12	"	--	--
271	"	"	Brown	34-271	P	20	20	--	MS17803-20-20	MIL-C-28748/3	.282	--
272	"	"	Red	34-272	"	16	20	--	MS17803-16-20	MIL-C-28748/3	.282	--
273	"	"	Orange	34-273	"	16	16	--	MS17803-16-16	MIL-C-28748/3	.282	--
274	"	"	Yellow	35-274	S	20	20	--	MS17804-20-20	MIL-C-28748/4	--	.282
275	"	"	Green	35-275	"	16	20	--	MS17804-16-20	MIL-C-28748/4	--	.282
276	"	"	Blue	35-276	"	16	16	--	MS17804-16-16	MIL-C-28748/4	--	.282

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
277	Red	Violet	Violet	36-277	P	16	20	--	MS17804-16-20	MIL-C-28748/9	.312	--
278	"	"	Gray	36-278	"	16	16	--	MS17807-16-16	MIL-C-28748/9	.312	--
279	"	Violet	White	37-279	S	16	20	--	MS17808-16-20	MIL-C-28748/10	--	.312
280	"	Gray	Black	37-280	"	16	16	--	MS17808-16-16	MIL-C-28748/10	--	.312
287	"	Gray	Violet	44-287	P	16	22	--	MS90453-16-22	MIL-C-5015 (MS3400 series)	.510	--
288	"	"	Gray	44-288	"	16	16	--	MS90453-16-16	"	.510	--
289	"	"	White	44-289	"	12	16	--	MS90453-12-16	"	--	--
290	"	White	Black	44-290	"	12	12	--	MS90453-12-12	"	--	--
291	"	"	Brown	44-291	"	8	8	--	MS90453-8-8	"	--	--
292	"	"	Red	44-292	"	4	4	--	MS90453-4-4	"	--	--
293	"	"	Orange	44-293	"	0	0	--	MS90453-0-0	"	--	--
294	"	"	Yellow	45-294	S	16	22	--	MS90453-16-22	"	--	.510
295	"	"	Green	45-295	"	16	16	--	MS90454-16-16	"	--	.510
296	"	"	Blue	45-296	"	12	16	--	MS90454-12-16	"	--	--
297	"	"	Violet	45-297	"	12	12	--	MS90454-12-12	"	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
298	Red	White	Gray	45-298	S	8	8	--	MS90454-8-8	MIL-C-5015 (MS3400 series)	--	--
299	"	"	White	45-299	"	4	4	--	MS90454-4-4	"	--	--
300	Orange	Black	Black	45-300	"	0	0	--	MS90454-0-0	"	--	--
301	"	"	Brown	46-301	"	23	28	--	MS90460A-23-28	MIL-C-81511 (series 2)	--	.170
302	"	"	Red	46-302	"	23	28	--	MS90460B-23-28	"	--	.170
303	"	"	Orange	46-303	"	23	22	--	MS90460A-23-22	"	--	.170
304	"	"	Yellow	46-304	"	23	22	--	MS90460B-23-22	"	--	.170
305	"	"	Green	46-305	"	20	20	--	MS90460A-20-20	"	--	.220
306	"	"	Blue	46-306	"	20	20	--	MS90460B-20-20	"	--	.220
307	"	"	Violet	46-307	"	16	16	--	MS90460A-16-16	"	--	.220
308	"	"	Gray	46-308	"	16	16	--	MS90460B-16-16	"	--	.220
309	"	"	White	46-309	"	12	12	--	MS90460A-12-12	"	--	--
310	"	Brown	Black	46-310	"	12	12	--	MS90460B-12-12	"	--	--
311	"	"	Brown	47-311	P	23	28	--	MS90461A-23-28	MIL-C-81511 (series 1 & 2)	.220	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
312	Orange	Brown	Red	47-3121	P	23	28	--	MS90461B-23-28	MIL-C-81511 (series 1 & 2)	.220	--
313	"	"	Orange	47-313	"	23	22	--	MS90461A-23-22	"	.220	--
314	"	"	Yellow	47-314	"	23	22	--	MS90461B-23-22	"	.220	--
315	"	"	Green	47-315	"	20	20	--	MS90461A-20-20	"	.220	--
316	"	"	Blue	47-316	"	20	20	--	MS90461B-20-20	"	.220	--
Refer to bin codes 337 through 339 for remaining contacts of MIL-C-39029/47.												
317	Orange	Brown	Violet	48-317	P	6	6	--	MS90559-11	MIL-C-22992 (class L)	--	--
318	"	"	Gray	48-318	"	6N	6	--	MS90559-12	"	--	--
319	"	"	White	48-319	"	6G	6	--	MS90559-14	"	--	--
320	"	Red	Black	48-320	"	4	4	--	MS90559-8	"	--	--
321	"	"	Brown	48-321	"	4N	4	--	MS90559-9	"	--	--
322	"	"	Red	48-322	"	4G	4	--	MS90559-13	"	--	--
323	"	"	Orange	48-323	"	1/0	1/0	--	MS90559-5	"	--	--
324	"	"	Yellow	48-324	"	1/0N	1/0	--	MS90559-6	"	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
325	Orange	Red	Green	48-325	P	2/0	2/0	--	MS90559-3	MIL-C-22992 (class L)	--	--
326	"	"	Blue	48-326	"	2/0N	2/0	--	MS90559-4	"	--	--
327	"	"	Violet	48-327	"	4/0	4/0	--	MS90559-1	"	--	--
328	"	"	Gray	48-328	"	4/0N	4/0	--	MS90559-2	"	--	--
329	"	"	White	49-329	S	6	6	--	MS90560-7	"	--	--
330	"	Orange	Black	49-330	"	6G	6	--	MS90560-8	"	--	--
331	"	"	Brown	49-331	"	4	4	--	MS90560-5	"	--	--
332	"	"	Red	49-332	"	4G	4	--	MS90560-9	"	--	--
333	"	"	Orange	49-333	"	1/0	1	--	MS90560-3	"	--	--
334	"	"	Yellow	49-334	"	2/0	2/0	--	MS90560-2	"	--	--
335	"	"	Green	49-335	"	4/0	4/0	--	MS90560-1	"	--	--
337	"	"	Violet	47-337	P	16	16	--	MS90461B16-16	MIL-C-81511 (series 1 & 2)	.220	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
338	Orange	Orange	Gray	47-338	P	12	12	--	MS90461A12-12	MIL-C-81511 (series 1 & 2)	--	--
339	"	"	White	47-339	"	12	12	--	MS90461B12-12	"	--	--
340	"	Yellow	Black	50-340	"	--	--	12	M83733/13-12	MIL-C-83733	.260 5/	.260 5/
341	"	"	Brown	51-341	S	--	--	12	M83733/14-12	"	.260 6/	.260 6/
342	"	"	Red	54-342	P	--	--	12	MS27184-22P	MIL-C-26500	.235 3/	.255 3/
343	"	"	Orange	54-343	"	--	--	8	MS27184-20P	"	.235 3/	.255 3/
344	"	"	Yellow	55-344	S	--	--	12	MS27185-22S	"	.150 4/	.235 4/
345	"	"	Green	55-345	"	--	--	8	MS27185-20S	"	.150 4/	.235 4/
348	"	"	Gray	56-348	"	22	22D	--	MS27490-22D MS27655-22D	MIL-C-38999 (series I, III, and IV)	--	.166
349	"	"	White	56-349	"	22	22M	--	MS27490-22M	"	--	.166

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
350	Orange	Green	Black	56-350	S	22	22	--	MS27490-22	MIL-C-38999 (series I, III and IV)	--	.166
351	"	"	Brown	56-351	"	20	20	--	MS27490-20 MS27655-20	"	--	.166
352	"	"	Red	56-352	"	16	16	--	MS27490-16 MS27655-16	"	--	.166
353	"	"	Orange	56-353	"	12	12	--	MS27490-12 MS27655-12	"	--	--
354	"	"	Yellow	57-354	"	22	22D	--	MS27491-22D MS27492-22D M24308/12-1	MIL-C-24308 MIL-C-55302/68, /71,/72,&/75 MIL-C-38999 (series II) MIL-C-83733		.166
355	"	"	Green	57-355	"	22	22M	--	MS27492-22M MS27491-22M	"		.166
356	"	"	Blue	57-356	"	22	22	--	MS27491-22 MS27492-22	"		.166
357	"	"	Violet	57-357	"	20	20	--	MS27491-20 MS27492-20	"		.166
358	"	"	Gray	57-358	"	16	16	--	MS27491-16 MS27492-16	"		.166

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
359	Orange	Green	White	57-359	S	12	12	--	MS27491-12 MS27492-12	MIL-C-24308 MIL-C-55302/68, /71,/72 & /75 MIL-C-38999 (series II) MIL-C-83733	--	--
360	"	Blue	Black	58-360	P	22	22D	--	MS27493-22D MS27494-22D M24308/13-1	MIL-C-24308 MIL-C-55302/69 MIL-C-38999 (series I thru IV) MIL-C-83733	.166	--
361	"	"	Brown	58-361	"	22	22M	--	MS27493-22M MS27494-22M	"	.166	--
362	"	"	Red	58-362	"	22	22	--	MS27493-22 MS27494-22	"	.166	--
363	"	"	Orange	58-363	"	20	20	--	MS27493-20 MS27494-20	"	.166	--
364	"	"	Yellow	58-364	"	16	16	--	MS27493-16 MS27494-16	MIL-C-38999 (series I & III)	.166	--
365	"	"	Green	58-365	"	12	12	--	MS27493-12 MS27494-12	"	--	--
366	"	"	Blue	59-366	S	--	--	8	MS27535	MIL-C-24308	.200 4/	.405 4/
367	"	"	Violet	60-367	P	--	--	8	MS27536	"	.405 3/	.200 3/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
368	Orange	Blue	Gray	63-368	S	20	20	--	M24308/10-1	MIL-C-24308	--	.188
369	"	"	White	64-369	P	20	20	--	M24308/11-1	"	.188	--
384	"	Gray	Yellow	69-384	S	16	24	--	M39029/69-1	MIL-C-85028(AS)	--	.345
385	"	"	Green	69-385	"	16	20	--	M39029/69-2	"	--	.345
386	"	"	Blue	69-386	"	16	16	--	M39029/69-3	"	--	.345
387	"	"	Violet	70-387	P	16	24	--	M39029/70-1	"	.345	--
388	"	"	Gray	70-388	"	16	20	--	M39029/70-2	"	.345	--
389	"	"	White	70-389	"	16	16	--	M39029/70-3	"	.345	--
390	"	White	Black	71-390	"	22	2/	--	M39029/71-1	MIL-C-38999 (series II) MIL-C-24308 MIL-C-83733	.166	--
391	"	"	Brown	71-391	"	22	2/	--	M39029/71-2	"	.166	--
392	"	"	Red	71-392	"	22	2/	--	M39029/71-3	"	.166	--
393	"	"	Orange	72-393	S	22	2/	--	M39029/72-1	MIL-C-38999 (series II) MIL-C-55302/68, /71 and /75 MIL-C-24308/2, /6	--	.166

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
394	Orange	White	Yellow	72-394	S	22	2/	--	M39029/72-2	MIL-C-38999 (series II) MIL-C-55302/68, /71 and /75 MIL-C-24308/2, /6	--	.166
395	"	"	Green	72-395	"	22	2/	--	M39029/72-3	"	--	.166
396	"	"	Blue	73-396	"	--	--	12	M39029/73-12A	MIL-C-83723 (series 3)	.250 4/	.300 4/
397	"	"	Violet	73-397	"	--	--	12	M39029/73-12C	"	.250 4/	.300 4/
398	"	"	Gray	73-398	"	--	--	12	M39029/73-12B	"	.250 4/	.300 4/
399	"	"	White	74-399	P	--	--	12	M39029/74-12A	"	.300 3/	.250 3/
400	Yellow	Black	Black	74-400	"	--	--	12	M39029/74-12C	"	.300 3/	.250 3/
401	"	"	Brown	74-401	"	--	--	12	M39029/74-12B	"	.300 3/	.250 3/
402	"	"	Red	27-402	S	--	--	12	M39029/27-12B	"	.166 4/	.166 4/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
403	Yellow	Black	Orange	27-403	S	--	--	12	M39029/27-12C	MIL-C-83723 (series 3)	.166 4/	.166 4/
404	"	"	Yellow	27-402	"	--	--	12	M39029/27-12D	"	.166 4/	.166 4/
405	"	"	Green	27-405	"	--	--	12	M39029/27-12E	"	.166 4/	.166 4/
406	"	"	Blue	27-406	"	--	--	12	M39029/27-12F	"	.166 4/	.166 4/
407	"	"	Violet	27-407	"	--	--	12	M39029/27-12G	"	.166 4/	.166 4/
408	"	"	Gray	27-408	"	--	--	12	M39029/27-12H	"	.166 4/	.166 4/
409	"	"	White	28-409	P	--	--	12	M39029/28-12B	MIL-C-38999 (series I, II, III and IV)	.166 3/	.166 3/
410	"	Brown	Black	28-410	"	--	--	12	M39029/28-12C	"	.166 3/	.166 3/
411	"	"	Brown	28-411	"	--	--	12	M39029/28-12D	"	.166 3/	.166 3/
412	"	"	Red	28-412	"	--	--	12	M39029/28-12E	"	.166 3/	.166 3/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
413	Yellow	Brown	Orange	28-413	P	--	--	12	M39029/28-12F	MIL-C-38999 (series I, II, III and IV)	.166 3/	.166 3/
414	"	"	Yellow	28-414	"	--	--	12	M39029/28-12G	"	.166 3/	.166 3/
415	"	"	Green	28-415	"	--	--	12	M39029/28-12H	"	.166 3/	.166 3/
416	"	"	Blue	75-416	S	--	--	12	M39029/75-12A	MIL-C-38999 (series I, III and IV)	.166 4/	.166 4/
417	"	"	Violet	75-417	"	--	--	12	M39029/75-12B	"	.166 4/	.166 4/
418	"	"	Gray	75-418	"	--	--	12	M39029/75-12C	"	.166 4/	.166 4/
419	"	"	White	75-419	"	--	--	12	M39029/75-12D	"	.166 4/	.166 4/
420	"	Red	Black	75-420	"	--	--	12	M39029/75-12E	"	.166 4/	.166 4/
421	"	"	Brown	75-421	"	--	--	12	M39029/75-12F	"	.166 4/	.166 4/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
422	Yellow	Red	Red	75-422	S	--	--	12	M39029/75-12G	MIL-C-38999 (series I, III and IV)	.166 4/	.166 4/
423	"	"	Orange	74-423	"	--	--	12	MS39029/28-12H	MIL-C-38999 (series I, II, III and IV)	.166 4/	.166 4/
424	"	"	Yellow	76-424	P	--	--	16	M39029/76-16A	"	.166 3/	.166 3/
425	"	"	Green	76-425	"	--	--	16	M39029/76-16B	"	.166 3/	.166 3/
426	"	"	Blue	76-426	"	--	--	16	M39029/76-16C	"	.166 3/	.166 3/
427	"	"	Violet	76-427	"	--	--	16	M39029/76-16D	"	.166 3/	.166 3/
428	"	"	Gray	77-428	S	--	--	16	M39029/77-16A	"	.166 4/	.166 4/
429	"	"	White	77-429	"	--	--	16	M39029/77-16B	"	.166 4/	.166 4/
430	"	Orange	Black	77-430	"	--	--	16	M39029/77-16C	"	.166 4/	.166 4/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
431	Yellow	Orange	Brown	77-431	S	--	--	16	M39029/77-16D	MIL-C-38999 (series I, II, III and IV)	.166 4/	.166 4/
432	"	"	Red	77-432	"	--	--	16	M39029/78-16A	"	.166 4/	.166 4/
433	"	"	Orange	78-433	"	--	--	16	M39029/78-16B	"	.166 4/	.166 4/
434	"	"	Yellow	78-434	"	--	--	16	M39029/78-16C	"	.166 4/	.166 4/
435	"	"	Green	78-435	"	--	--	16	M39029/78-16D	"	.166 4/	.166 4/
436	"	"	Blue	79-436	P	--	--	16	M39029/79-16A	MIL-C-28748/9	.275 3/	.200 3/
437	"	"	Violet	79-437	"	--	--	16	M39029/79-16B	"	.275 3/	.200 3/
438	"	"	Gray	80-438	S	--	--	16	M39029/80-16A	MIL-C-28748/10	.200 4/	.275 4/
439	"	"	White	80-439	"	--	--	16	M39029/80-16B	"	.200 4/	.275 4/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
440	Yellow	Yellow	Black	34-440	P	22	22	--	M39029/34-22-22	MIL-C-28748/3 and MIL-C-28748/13	.175	--
441	"	"	Brown	35-441	S	22	22	--	M39029/35-22-22	MIL-C-28748/4 and MIL-C-28748/14	--	.175
448	"	"	Gray	31-448	P	20	20	--	M39029/31-20-20	MIL-C-26482 (series 1) MIL-C-26500 and MIL-C-26518	.290	--
449	"	"	White	32-449	S	20	20	--	M39029/32-20-20	MIL-C-26482 (series 1) MIL-C-26550 and MIL-C-26518	--	.290
450	"	Green	Black	83-450	P	20	22	--	M39029/83-20-22	MIL-C-28840	.293	--
451	"	"	Brown	83-451	"	20	28	--	M39029/83-20-28	"	.293	--
452	"	"	Red	84-452	S	20	22	--	M39029/83-20-22	"	--	.293
453	"	"	Orange	84-453	"	20	28	--	M39029/83-20-28	"	--	.293

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
454	Yellow	Green	Yellow	85-454	P	16	16	--	M39029/8516 16C1	MIL-C-5015 (MS3450 series) and MIL-C-83723 (series 2)	.430	--
455	"	"	Green	85-455	"	16	16	--	M39029/8516 16C2	"	.430	--
456	"	"	Blue	85-456	"	16	16	--	M39029/8516 16C3	"	.430	--
457	"	"	Violet	85-457	"	16	16	--	M39029/8516 16C4	"	.430	--
458	"	"	Gray	85-458	"	12	12	--	M39029/8512 12C1	"	--	--
459	"	"	White	85-459	"	12	12	--	M39029/8512 12C2	"	--	--
460	"	Blue	Black	85-460	"	12	12	--	M39029/8512 12C3	"	--	--
461	"	"	Brown	85-461	"	12	12	--	M39029/8512 12C4	"	--	--
462	"	"	Red	86-462	S	16	16	--	M39029/8516 16C1	"	--	.430
463	"	"	Orange	86-463	"	16	16	--	M39029/8516 16C2	"	--	.430
464	"	"	Yellow	86-464	"	16	16	--	M39029/8516 16C3	"	--	.430
465	"	"	Green	86-465	"	16	16	--	M39029/8516 16C4	"	--	.430
466	"	"	Blue	86-466	"	12	12	--	M39029/8512 12C1	"	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
467	Yellow	Blue	Violet	86-467	S	12	12	--	M39029/851212C2	MIL-C-5015 (MS3450 series) and MIL-C-83723 (series 2)	--	--
468	"	"	Gray	86-468	"	12	12	--	M39029/851212C3	"	--	--
469	"	"	White	86-469	"	12	12	--	M39029/851212C4	"	--	--
470	"	Violet	Black	87-410	P	22	22	--	M39029/872222C1	MIL-C-38999 (series I,II, III and IV) MIL-C-83733	--	--
471	"	"	Brown	87-471	"	22	22	--	M39029/872222C2	"	--	--
472	"	"	Red	87-472	"	22	22	--	M39029/872222C3	"	--	--
473	"	"	Orange	87-473	"	22	22	--	M39029/872222C4	"	--	--
474	"	"	Yellow	87-474	"	20	20	--	M39029/872020C1	"	--	--
475	"	"	Green	87-475	"	20	20	--	M39029/872020C2	"	--	--
476	"	"	Blue	87-476	"	20	20	--	M39029/872020C3	"	--	--
477	"	"	Violet	87-477	"	20	20	--	M39029/872020C4	"	--	--
478	"	"	Gray	87-478	"	16	16	--	M39029/871616C1	"	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
479	Yellow	Violet	White	87-479	P	16	16	--	M39029/871616C2	MIL-C-38999 (series I, II, III and IV) MIL-C-83733	--	--
480	"	Gray	Black	87-480	"	16	16	--	M39029/871616C3	"	--	--
481	"	"	Brown	87-481	"	16	16	--	M39029/871616C4	"	--	--
482	"	"	Red	88-482	S	22	22	--	M39029/872222C1	MIL-C-38999 (series I, III and IV) MIL-C-83733	--	--
483	"	"	Orange	88-483	"	22	22	--	M39029/882222C2	"	--	--
484	"	"	Yellow	88-484	"	22	22	--	M39029/882222C3	"	--	--
485	"	"	Green	88-485	"	22	22	--	M39029/882222C4	"	--	--
486	"	"	Blue	88-486	"	20	20	--	M39029/882020C1	"	--	--
487	"	"	Violet	88-487	"	20	20	--	M39029/882020C2	"	--	--
488	"	"	Gray	88-488	"	20	20	--	M39029/882020C3	MIL-C-38999 (series I, III and IV) MIL-C-83723	--	--
489	"	"	White	88-489	"	20	20	--	M39029/882020C4	"	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
490	Yellow	White	White	88-490	S	16	16	--	M39029/881616C1	MIL-C-38999 (series I, III and IV) MIL-C-83723	--	--
491	"	"	Black	88-491	"	16	16	--	M39029/881616C2	"	--	--
492	"	"	Red	88-492	"	16	16	--	M39029/881616C3	"	--	--
493	"	"	Orange	88-493	"	16	16	--	M39029/881616C4	"	--	--
494	"	"	Yellow	89-494	"	22	22	--	M39029/892222C1	MIL-C-38999 (series II)	--	--
495	"	"	Green	89-495	"	22	22	--	M39029/892222C2	"	--	--
496	"	"	Blue	89-496	"	22	22	--	M39029/892222C3	"	--	--
497	"	"	Violet	89-497	"	22	22	--	M39029/892222C4	"	--	--
498	"	"	Gray	89-498	"	20	20	--	M39029/892020C1	"	--	--
499	"	"	White	89-499	"	20	20	--	M39029/892020C2	"	--	--
500	Green	Black	Black	89-500	"	20	20	--	M39029/892020C3	"	--	--
501	"	"	Brown	89-501	"	20	20	--	M39029/892020C4	"	--	--
502	"	"	Red	89-502	"	16	16	--	M39029/891616C1	"	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
503	Green	Black	Orange	89-503	S	16	16	--	M39029/8916 16C2	MIL-C-38999 (series II)	--	--
504	"	"	Yellow	89-504	"	16	16	--	M39029/8916 16C3	"	--	--
505	"	"	Green	89-505	"	16	16	--	M39029/8916 16C4	"	--	--
507	"	"	Violet	1-507	P	20	22D	--	M39029/1-20-20D	MIL-T-81714 (series 1)	--	--
508	"	"	Gray	83-508	"	20	20	--	M39029/83-20-22	MIL-C-28840	.287	--
509	"	"	White	84-509	S	20	20	--	N/A	MIL-C-28840	--	.287
510	"	Brown	Black	86-510	"	16S	16	--	"	MIL-C-5015 (MS3450 series) and MIL-C-83723 (series 2)	--	--
511	"	"	Brown	86-511	"	16S	16	--	"	"	--	--
512	"	"	Red	86-512	"	16S	16	--	"	"	--	--
513	"	"	Orange	86-513	"	16S	16	--	"	"	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
514	Green	Brown	Yellow	9-514	P	16	16	--	N/A	MIL-C-26482 (series 2) MIL-C-81703 (series 3) MIL-C-83723 (series 3) and MIL-C-83733	--	--
515	"	"	Green	9-515	"	16	16	--	"	"	--	--
516	"	"	Black	9-516	"	16	16	--	"	"	--	--
517	"	"	Violet	9-517	"	16	16	--	"	"	--	--
518	"	"	Gray	9-518	"	16	16	--	"	"	--	--
519	"	"	White	10-519	S	16	16	--	"	"	--	--
520	"	Red	Black	10-520	"	16	16	--	"	"	--	--
521	"	"	Brown	10-521	"	16	16	--	"	"	--	--
522	"	"	Red	10-522	"	16	16	--	"	"	--	--

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
523	Green	Red	Orange	10-523	S	16	16	--	N/A	MIL-C-26482 (series 2) MIL-C-81703 (series 3) MIL-C-83723 (series 3) and MIL-C-83733	--	--
524	"	"	Yellow	72-524	"	22	2/	--	"	MIL-C-38999 (series I, III and IV)	--	.166
525	"	"	Green	72-525	"	22	2/	--	"	"	--	.166
526	"	"	Blue	72-526	"	22	2/	--	"	"	--	.166
527	"	"	Violet	56-527	"	10	10	--	"	"	--	.166
528	"	"	Gray	58-528	P	10	10	--	"	"	--	--
529	"	"	White	90-529	"	--	--	8	"	MIL-C-38999 (series III)	.166 3/	.166 3/
530	"	Orange	Black	91-530	S	--	--	8	"	"	.166 4/	.166 4/

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
531	Green	Orange	Brown	92-531	S	22	22	--	N/A	MIL-R-6106 MIL-S-12883 /40 & /41		
532	"	"	Red	92-532	"	20	20	--	"	"		
533	"	"	Orange	92-533	"	16	16	--	"	"		
534	"	"	Yellow	92-534	"	16	20	--	"	"		
535	"	"	Green	92-535	"	12	12	--	"	"		
536	"	"	Blue	92-536	"	12	16	--	"	"		
537	"	"	Violet	93-537	P	22	22	--	"	DOD-C-83527		
538	"	"	Gray	93-538	"	20	20	--	"	"		
539	"	"	White	93-539	"	16	16	--	"	"		
540	"	Yellow	Black	93-540	"	12	12	--	"	"		
541	"	"	Brown	94-541	S	22	22	--	"	"		
542	"	"	Red	94-542	"	20	20	--	"	"		
543	"	"	Orange	94-543	"	16	16	--	"	"		
544	"	"	Yellow	94-544	"	12	12	--	"	"		
545	"	"	Green	95-545	"	--	--	8	"	"		

See footnotes at end of table.

Contact summary (continued)

BIN code 1/	Color bands			Military part number M39029/	Pin or socket	Power contacts		Shielded contact cavity size	Superseded military part numbers	Connector used with (specification)	E	F
	1st	2nd	3rd			Mating end size	Wire barrel size					
546	Green	Yellow	Blue	96-546	P	--	--	8	N/A	DOD-C-83527	--	--
547	"	"	Violet	97-547	"	--	--	1	"	"	--	--
548	"	"	Gray	98-548	S	--	--	1	"	"	--	--
549	"	"	White	99-549	"	--	--	5	"	"	--	--
550	"	Green	Black	100-550	"	--	--	5	"	"	--	--
551	"	"	Brown	101-551	"	22	28	--	"	MIL-S-12883/44, /45, /46	--	--
552	"	"	Red	101-552	"	22	22	--	"	"	--	--
553	"	"	Orange	101-553	"	20	20	--	"	"	--	--
554	"	"	Yellow	101-554	"	16	16	--	"	"	--	--
556	"	"	Blue	104-556	P	--	--	8	"	MIL-C-28840	--	--
558	"	"	Gray	102-558	"	--	--	12	N/A	MIL-C-38999 (series I, II, III and IV)	--	--
559	"	"	White	103-559	S	--	--	12	"	MIL-C-38999 (series I, III and IV)	--	--
605	Blue	Black	Green	22-605	"	12	12	--	"	MIL-T-81714 (series 2)	--	--

See footnotes at end of table.

Contact summary (continued)

1/ BIN - Basic identification number.

2/ Solderless wrappost termination.

3/ For shielded pin contacts:
E = O.D. of outer contact (see figure 2).
F = I.D. of inner contact (see figure 1).

4/ For shielded socket contacts:
E = O.D. of inner contact (see figure 1).
F = I.D. of outer contact (see figure 2).

5/ For shielded pin contacts:
E = O.D. of outer contact (see figure 2).
F = O.D. of inner contact (see figure 1).

6/ For shielded socket contacts:
E = I.D. of outer contact (see figure 2).
F = I.D. of inner contact (see figure 1).

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions – Reverse Side)

1. DOCUMENT NUMBER	2. DOCUMENT TITLE
MIL-C-39029D	CONTACTS, ELECTRICAL CONNECTOR, GENERAL SPECIFICATION FOR

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR
	☐ USER
b. ADDRESS *(Street, City, State, ZIP Code)*	☐ MANUFACTURER
	☐ OTHER *(Specify)*: _____

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

DD FORM 82 MAR 1426

PREVIOUS EDITION IS OBSOLETE.

(DETACH THIS FORM, FOLD ALONG THIS LINE.)