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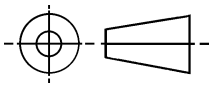

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400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE STANDARD

CONTACTS, ELECTRICAL CONNECTOR, SOCKET, CRIMP REMOVABLE, SHIELDED, SIZE 16 (FOR MIL-C-38999 SERIES I, III, AND AND IV CONNECTORS)

AS39029/77
SHEET 1 OF 9

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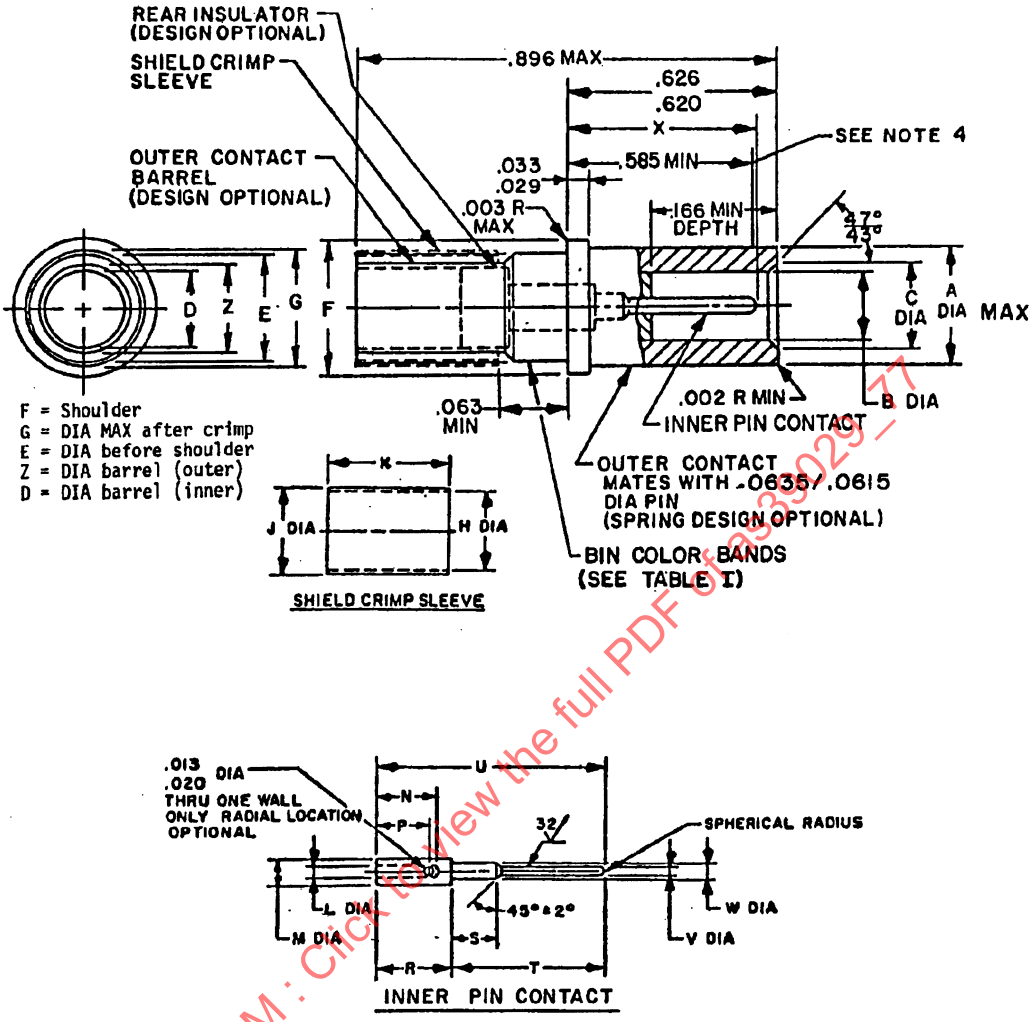

FIGURE 1. SOCKET CONTACTS.

BIN code	A Dia. Max.	B Dia.	C Dia.	D Dia. Min.	E Dia.	F Dia.	G Dia. Max.	H Dia. Min.	J Dia. Max.	K	L Dia. Min.	M Dia. Max.
428	.113	.068 .065	.089 .084	.0670	.103 .101	.130 .127	.108	.105	.120	.105 .095	.0210	.046
429	"	"	"	.0575	"	"	"	.094	"	"	.0210	.046
430	"	"	"	.0670	"	"	"	.105	"	"	.0355	.052
431	"	"	"	.0575	"	"	"	.094	"	"	.0270	.046

BIN code	N Min.	P	R	S	T	U REF.	V Dia.	W Dia.	X	Z Dia. Max.
428	.103	.094 .087	.125 .119	.079 .073	.269 .266	.3895	.0155 .0145	.030 .028	.611 .601	.085
429	"	"	"	"	"	"	"	"	"	.076
430	"	"	"	"	"	"	"	"	"	.085
431	"	"	"	"	"	"	"	"	"	.076

INCHES	MM	INCHES	MM	INCHES	MM	INCHES	MM	INCHES	MM
.002	0.05	.030	0.76	.0670	1.700	.095	2.41	.127	3.23
.003	0.08	.033	0.84	.068	1.73	.101	2.57	.130	3.30
.013	0.33	.0355	9.902	.073	1.85	.103	2.62	.166	4.22
.0145	0.368	.046	1.17	.076	1.93	.105	2.67	.266	6.67
.0155	0.394	.052	1.32	.079	2.01	.108	2.74	.269	6.83
.020	0.51	.0575	1.460	.084	2.13	.110	2.79	.585	14.86
.0210	0.530	.0615	1.562	.085	2.16	.113	2.87	.601	15.27
.0270	0.690	.063	1.60	.087	2.21	.119	3.02	.611	15.52
.028	0.71	.0635	1.613	.089	2.26	.120	3.05	.620	15.75
.029	0.74	.065	1.66	.094	2.39	.125	3.18	.626	15.90
								.896	22.76

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Dimensions shown apply after plating.
4. Point at which a square ended pin of the same basic diameter as the mating contact first engages the outer contact spring. Provision for clearance hole shall be provided.
5. Crimp deformation: The maximum diameter over the crimped portion of the shield crimp sleeve shall not exceed G diameter.

FIGURE 1. SOCKET CONTACTS - CONTINUED.

REQUIREMENTS:

Contacts shall comply with the reliability assurance provisions of MIL-STD-790 as specified in MIL-C-38999.

Dimensions, design characteristics, and configuration: See figure 1 and table I.

Mating contacts: MIL-C-39029/76.

Tools: See table II.

TABLE I. DESIGN CHARACTERISTICS.

BIN code	Color bands			Cable accommodated	Contact cavity size	Type	Class
	1st	2nd	3rd				
428	Yellow	Red	Gray	3/ M17/119-RG174	16	D	B
				M17/113-RG316	"	"	"
				M17/094-RG179	"	"	"
				1/2/ Times AA3248	"	"	"
				Teledyne 11299	"	"	"
				Thermax 75-738-BCCWXE	"	"	"
				Tensolite 30888/L707YX-1	"	"	"
				Haveg 8100207	"	"	"
429	Yellow	Red	White	M17/093-RG178	"	"	"
430	Yellow	Orange	Black	1/ Haveg 61-02051	"	"	"
				Revere WH95623 (red shielded)	"	"	"
431	Yellow	Orange	Brown	1/ Haveg 30-02024	"	"	"
				Haveg 30-02033	"	"	"
				Tensolite 24713/A955KK1	"	"	"
				Tensolite 26723/A955KK1	"	"	"

1/ Or equivalent.

2/ High tensile strength copper alloy wire.

3/ M17/119-RG174 PVC not for Air Force use.

TABLE II. TOOLS.

BIN code	Inner contact		Outer contact		Installing tool	Removal tool
	Basic crimping tool	Positioner	Basic crimping tool	Positioner		
428, 429, 430, 431	M22520/2-01	M22520/2-35	M22520/4-01	M22520/4-02	M81969/8-07 or M81969/14-03	M81969/8-08 or M81969/14-03

Cable to contact information: See table III.

TABLE III. CABLE TO CONTACT INFORMATION.

BIN code	Cable accommodated	Inner contact tool selector setting no.
428	3/ M17/119-RG174	3
	M17/113-RG316	5
	M17/094-RG179	3
	1/ 2/ Times AA3248	"
	Teledyne 11299	"
	Thermax 75-738-BCCWXE	"
	Tensolite 30888/L707YX-1	"
	Haveg 8100207	"
429	M17/093-RG178	3
430	1/ Haveg 61-02051	4
	Revere WH95623 (red shielded)	4
431	1/ Haveg 30-02024	4
	Haveg 30-02033	3
	Tensolite 24713/A955KK1	3
	Tensolite 26723/A955KK1	3

1/ Or equivalent.

2/ High tensile strength copper alloy wire.

3/ M17/119-RG174 PVC not for Air Force use.

Contact resistance: See table IV.
Test current:
Inner contact - 1 ampere.
Outer contact - 12 amperes.

Low signal level contact resistance (inner contact only): See table V.

Contact engagement and separation forces (socket contact only): The engagement depth shall be as encountered in normal service. The test pins shall be in accordance with MS3197 except the diameters shall be as specified in the following, and surface roughness shall not exceed 3 microinches. Provision for clearance hole shall be provided.

Test pin diameter (inch)	Minimum separation force (ounces)		Maximum engagement force (ounces)		Maximum average engagement force
	Initial	After conditioning	Initial	After conditioning	
.0635 +.0002 -.0000	NA	NA	30.0	36.0	NA
.0615 +.0000 -.0002	2.0	1.5	NA	NA	NA

Dielectric withstanding voltage (applied between inner and outer contact):
Test voltage:
At sea level - 800 V ac rms.
At 50,000 feet - 250 V ac rms.

Tensile strength (inner and outer contact crimp joint): See table V.

TABLE IV. CONTACT RESISTANCE.

BIN code	Cable accommodated	Maximum voltage drop (millivolts) 25° +3°, -0°C Inner contact	25° +3°, -0°C Outer contact	2/ 25° +3°, -0°C Inner contact	2/ 25° +3°, -0°C Outer contact	200° +3°, -0°C Inner contact	200° +3°, -0°C Outer contact	Maximum average voltage drop
428	5/ M17/119-RG174	55	85	66	102	94 4/	145 4/	NA
	M17/113-RG316	55	75	66	90	94	128	"
	M17/094-RG179	120	70	144	84	204	119	"
	1/ 3/ Times AA3248	170	150	204	180	290	255	"
	1/ 3/ Teledyne 11299	"	"	"	"	"	"	"
	1/ 3/ Thermax 75-738-BCCWXE	"	"	"	"	"	"	"
	1/ 3/ Tensolite 30888/L707YX-1	"	"	"	"	"	"	"
	1/ 3/ Haveg 8100207	"	"	"	"	"	"	"
429	M17/093-RG178	120	110	144	132	204	187	"
430	1/ Haveg 61-02051	65	100	78	120	111	170	"
	1/ Revere WH95623 (red shielded)	65	100	78	120	111	170	"
431	1/ Haveg 30-00761	120	110	144	132	204	187	"
	1/ Haveg 30-02024	"	"	"	"	"	"	"
	1/ Haveg 30-02033	"	"	"	"	"	"	"
	1/ Tensolite 24713/A955KK1	55	100	66	120	94	170	"
	1/ Tensolite 26723/A955KK1	65	100	78	120	111	170	"

1/ Or equivalent.

2/ After conditioning.

3/ High tensile strength copper alloy wire.

4/ 85° +3°, -0°C is maximum operating temperature of cable.

5/ M17/119-RG174 PVC not for Air Force use.

TABLE V. LOW SIGNAL LEVEL CONTACT RESISTANCE (INNER CONTACT ONLY) AND TENSILE STRENGTH.

BIN code	Cable accommodated	Maximum contact resistance (milliohms)		Tensile load (pounds) (minimum)	
		Initial	After conditioning	Inner contact	Outer contact
428	3/ M17/119-RG174	55	66	15.0	15.0
	M17/113-RG316	55	66	10.0	"
	M17/094-RG179	120	144	3.5	"
	1/ 2/ Times AA3248	170	204	7.0	35.0
	Teledyne 11299	"	"	"	"
	Thermax 75-738-BCCWXE	"	"	"	"
	Tensolite 30888/L707YX-1	"	"	"	"
	Haveg 8100207	"	"	"	"
429	M17/093-RG178	120	144	3.5	10.0
430	1/ Haveg 61-02051	65	78	15.0	15.0
	Revere WH95623 (red shielded)	65	78	15.0	15.0
431	1/ Haveg 30-00761	120	144	4.0	10.0
	Haveg 30-02024	"	"	"	"
	Haveg 30-02033	"	"	"	"
	Tensolite 24713/A955KK1	55	66	"	"
	Tensolite 26723/A955KK1	65	78	"	"

1/ Or equivalent.

2/ High tensile strength copper alloy wire.

3/ M17/119-RG174 PVC not for Air Force use.

Vibration (random): Connectors shall be subjected to the test specified in method 2005 of MIL-STD-1344. The following details shall apply:

a. Test condition V. Using the vibration envelope shown on figure 2. (Derived from zone 2 outlined in Aerospace Information Report AIR 1557.)
b. Vibration to be conducted at standard test conditions.
c. Duration shall be 8 hours in the longitudinal direction and 8 hours in a perpendicular direction for a total of 16 hours.

Shock (high-impact): Wired and mated connectors shall be subjected to the test specified in MIL-S-901, grade A with the following modifications and additions:

a. Connectors shall be coupled together by normal coupling means. All contacts shall be wired in a series circuit witih 100 milliamperes maximum current flow through the series circuit during high-impact shock. Connectors shall be monitored for any discontinuities. A detector capable of detecting all discontinuities in excess of 1 microsecond shall be used.
b. Mounting fixture shall be in accordance with MIL-S-901, light weight.
c. The cable or wire bundle shall be supported on a stationary frame in such a manner to provide a free flexing cable length between frame and fixture of not less than 36 inches (914.4 mm).
d. Test condition A. The plug shall be terminated with at least 80 percent of wired contacts. The wire bundle shall be provided with straight, open frame, strain relief accessory hardware.