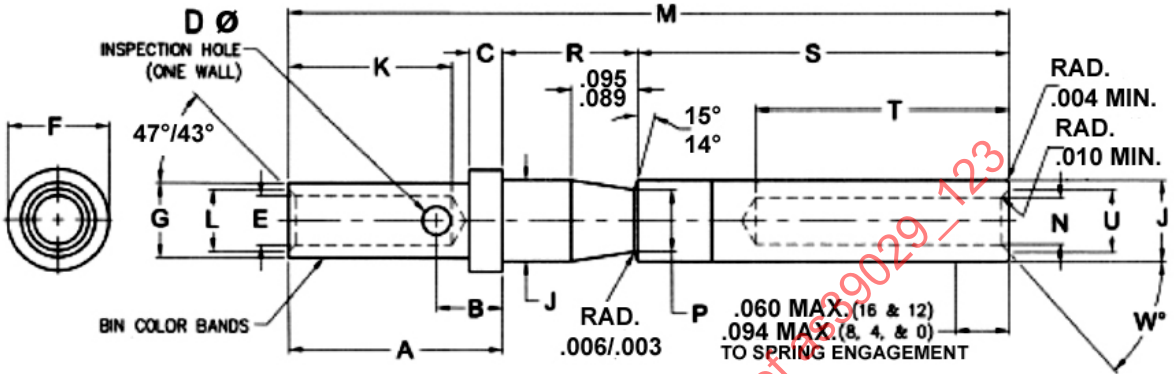
FEDERAL SUPPLY CLASS
5999

RATIONALE

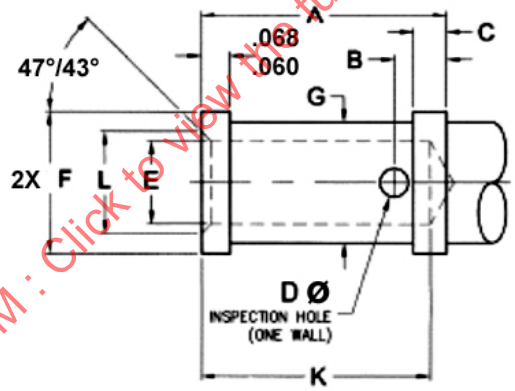
THIS AS39029 CONTACT DETAIL SHEET IS REQUIRED TO SUPPORT AS340X1 SERIES OF AS50151 AND AS95234 HIGH CURRENT APPLICATIONS NOT COVERED BY THE CURRENT AS39029 DETAIL SHEETS.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS39029.



SOCKET INTERFACE DESIGN FOR ALL BIN CODES
WIRE BARREL DESIGN FOR BIN CODES 676 and 677 (CONTACT SIZES 16 AND 12)

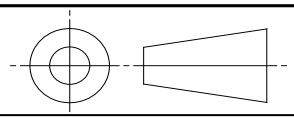


WIRE BARREL DESIGN
BIN CODES 678, 679 AND 680 (CONTACT SIZES 8, 4 AND 0)

FIGURE 1 - SOCKET CONTACT

For more information on this standard, visit
https://www.sae.org/standards/content/AS39029/123

THIRD ANGLE PROJECTION



ISSUED 2015-12 REAFFIRMED 2020-10

CUSTODIAN: AE-8/AE-8C1

PROCUREMENT SPECIFICATION: AS39029

AEROSPACE STANDARD

CONTACTS, ELECTRICAL CONNECTOR, SOCKET, CRIMP REMOVABLE (FOR AS50151 SERIES AS340X1 CONNECTORS AND AS95234 CONNECTORS)

AS39029™/123
SHEET 1 OF 5

TABLE 1 - FIGURE 1 DIMENSIONS

BIN CODE	A	B	C	D DIA.	E DIA.	F DIA.	G DIA.
676	.298 (7.57) .294 (7.47)	.079 (2.01) .073 (1.85)	.048 (1.22) .044 (1.12)	.042 (1.07) .036 (0.91)	.068 (1.73) .066 (1.68)	.148 (3.76) .133 (3.38)	.105 (2.67) .101 (2.57)
677					.102 (2.59) .098 (2.49)	.202 (5.13) .189 (4.80)	.153 (3.89) .147 (3.73)
678	.520 (13.21) .510 (12.95)	.094 (2.39) .084 (2.13)		.066 (1.68) .060 (1.52)	.184 (4.67) .179 (4.55)	.313 (7.95) .309 (7.85)	.269 (6.83) .263 (6.68)
679					.286 (7.26) .279 (7.09)	.419 (10.64) .409 (10.39)	.380 (9.65) .370 (9.40)
680	.675 (17.15) .665 (16.89)				.458 (11.63) .451 (11.46)	.611 (15.52) .601 (15.27)	.568 (14.43) .558 (14.17)

TABLE 1 - FIGURE 1 DIMENSIONS (CONTINUED)

BIN CODE	J DIA.	K	L	M REF.	N DIA.	P DIA.	R	S	T MIN.	U MIN.	W°
676	.113 (2.87) .110 (2.79)	.281 (7.14) .250 (6.35)	.090 (2.29) .080 (2.03)	1.286 (32.66)	.064 (1.63) MIN	.087 (2.21) .083 (2.11)	.189 (4.80) .185 (4.70)	.808 (20.52) .798 (20.27)	.510 (12.95)	.086 (2.18)	53° 43°
677	.161 (4.09) .158 (4.01)		.125 (3.18) .115 (2.92)		.0955 (2.43) MIN	.135 (3.43) .131 (3.33)			.625 (15.88)	.125 (3.18)	
678	.252 (6.40) .249 (6.32)	.534 (13.56) .480 (12.19)	.230 (5.84) .220 (5.59)	1.505 (38.23)	.149 (3.78) .145 (3.68)	.225 (5.72) .221 (5.61)				.193 (4.90)	31° 29°
679	.336 (8.53) .333 (8.46)		.364 (9.25) .354 (8.99)		.232 (5.89) .228 (5.79)	.310 (7.87) .307 (7.80)	.253 (6.43) .249 (6.32)	.744 (18.90) .734 (18.64)		.280 (7.11)	
680	.518 (13.16) .515 (13.08)	.690 (17.53) .636 (16.15)	.542 (13.77) .532 (13.51)	1.660 (42.16)	.364 (9.25) .360 (9.14)	.492 (12.50) .489 (12.42)				.386 (9.80)	

TABLE 2 - MARKING AND DESIGN CHARACTERISTICS

BIN CODE	COLOR BANDS 1ST	COLOR BANDS 2ND	COLOR BANDS 3RD	MATING END SIZE	WIRE BARREL SIZE	TYPE	CLASS
676	BLUE	VIOLET	BLUE	16	16	A	B
677	BLUE	VOILET	VIOLET	12	12		
678	BLUE	VOILET	GRAY	8	8		
679	BLUE	VIOLET	WHITE	4	4		
680	BLUE	GRAY	BLACK	0	0		

TABLE 3 - TOOL REQUIREMENTS

BIN CODE	BASIC CRIMPING TOOL	DIE SET	LOCATOR	POSITIONER	INSTALLING TOOL	REMOVAL TOOL
676	M22520/1-01 M22520/7-01	---	---	M22520/1-02 BLUE M22520/7-03	M81969/17-04	M81969/19-01
677	M22520/1-01	---	---	M22520/1-02 YELLOW	M81969/17-05	M81969/19-02
678	M22520/23-01	M22520/23-02	M22520/23-09	---	M81969/17-06	M81969/19-03
679	M22520/23-01	M22520/23-04	M22520/23-11	---	M81969/17-07	M81969/19-04
680	M22520/23-01	M22520/23-05	M22520/23-13	---	M81969/17-08	M81969/19-05

DETAIL SPECIFICATION REQUIREMENTS

1. DESIGN:

   CONTACT SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE 1 AND TABLES 1 AND 2. DIMENSIONS ARE IN INCHES AND SHOWN AFTER PLATING. UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS IN PARENTHESES ARE METRIC EQUIVALENTS, PROVIDED FOR GENERAL INFORMATION ONLY AND BASED ON 1 INCH = 25.4 MM.

2. TOOLS:

   TOOLS REQUIRED FOR CRIMPING CONTACTS TO WIRE/CABLE AND THE INSTALLING/REMOVAL FROM THE CONNECTOR SHALL BE IN ACCORDANCE WITH TABLE 3.

3. PART NUMBERS:

   CONTACT PART NUMBERS SHALL BE IN ACCORDANCE WITH TABLE 6.

4. MATERIALS:

   MATERIALS SHALL BE IN ACCORDANCE WITH AS39029, EXCEPT CONTACT BODY MATERIALS SHALL BE OF A HIGH CONDUCTIVITY COPPER ALLOY SUCH AS TELLURIUM COPPER IN ACCORDANCE WITH ASTM B301, CDA 145 OR OTHER COPPER ALLOY WITH AN IACS (INTERNATIONAL ANNEALED COPPER STANDARD) CONDUCTIVITY OF NO LESS THAN 80%. THE CONTACT SPRING MATERIAL MAY BE IN ACCORDANCE WITH AS39029. ALLOYS CONTAINING CADMIUM SHALL NOT BE PERMITTED. CONTACTS IN SIZES 0, 4, 8 SHALL BE SILVER PLATED IN ACCORDANCE WITH AS39029. CONTACTS IN SIZES 12 AND 16 SHALL BE GOLD PLATED IN ACCORDANCE WITH AS39029.

5. MECHANICAL:

   MECHANICAL PROPERTIES SHALL BE IN ACCORDANCE WITH AS39029.

6. ELECTRICAL:

ELECTRICAL PROPERTIES SHALL BE IN ACCORDANCE WITH AS39029, EXCEPT CURRENT RATING AND CONTACT RESISTANCE SHALL BE AS FOLLOWS WHEN MATED TO AN AS39029/124 HIGH CURRENT CARRYING CONTACT:

CURRENT RATING: SHALL BE IN ACCORDANCE WITH TABLE 4. TEST IN ACCORDANCE WITH EIA-364-1004 AND EIA-364-75, TEST CONDITIONS 3 AND 4, USING A 30 °C TEMPERATURE RISE AS SPECIFIED IN TABLE 5. TEST THE CURRENT RATING OF CONTACTS IN FREE AIR AND ALSO WHEN INSTALLED IN AN APPLICABLE CONNECTOR WITH ALL CONTACTS ENERGIZED AT AMBIENT TEMPERATURE. CURRENT RATING SHALL BE AVERAGED ON A SAMPLE SIZE OF 4 MATED CONTACT PAIRS. TEST USING AS95234 OR AS340X1 SERIES CONNECTORS WITH ENOUGH SAMPLES TO INCLUDE 4 MATED PAIRS OF EACH SIZE CONTACT.

TABLE 4 - CURRENT RATINGS

CONTACT SIZE	CURRENT RATING AT AMBIENT TEMPERATURE (AMPS)	CURRENT RATING IN CONNECTOR AT AMBIENT TEMPERATURE (AMPS)
16	20	15
12	41	36
8	80	70
4	130	120
0	280	265

CONTACT RESISTANCE: SHALL BE IN ACCORDANCE WITH TABLE 5 WHEN TESTED IN ACCORDANCE WITH EIA 364-75 IN FREE AIR AT AMBIENT TEMPERATURE AND WHEN INSTALLED IN A CONNECTOR WITH ALL CONTACTS ENERGIZED AT AMBIENT TEMPERATURE.

TABLE 5 - MILLIVOLT DROP AT TEMPERATURE RISE REQUIREMENTS

CONTACT SIZE	MILLIVOLT DROP AT 30° C TEMPERATURE RISE (MILLIVOLTS-MAX.)
16	10
12	9
8	7
4	5
0	5

7. ENVIRONMENTAL:

ENVIRONMENTAL PROPERTIES SHALL BE IN ACCORDANCE WITH AS39029.

VIBRATION SHALL BE IN ACCORDANCE WITH EIA 364-28 TEST CONDITION III FOLLOWED BY THE ENDURANCE TEST. THE ENDURANCE TEST SHALL BE IN ACCORDANCE WITH MIL-STD-167-1, TYPE I FOR VIBRATORY DISPLACEMENT OF ENVIRONMENTAL VIBRATION FOR MAST MOUNTED EQUIPMENT AT THE 4 FREQUENCIES IN TABLE 3.

SHOCK SHALL BE TEST CONDITION A.