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FEDERAL SUPPLY CLASS
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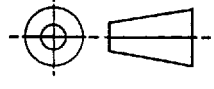

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PREPARED BY SUBCOMMITTEE AE-8C2

SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
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AEROSPACE STANDARD

TERMINAL, LUG, CRIMP STYLE, COPPER, UNINSULATED, RING TONGUE, TYPE I, CLASS I, FOR 175°C TOTAL CONDUCTOR TEMPERATURE

AS20659
SHEET 1 OF 7

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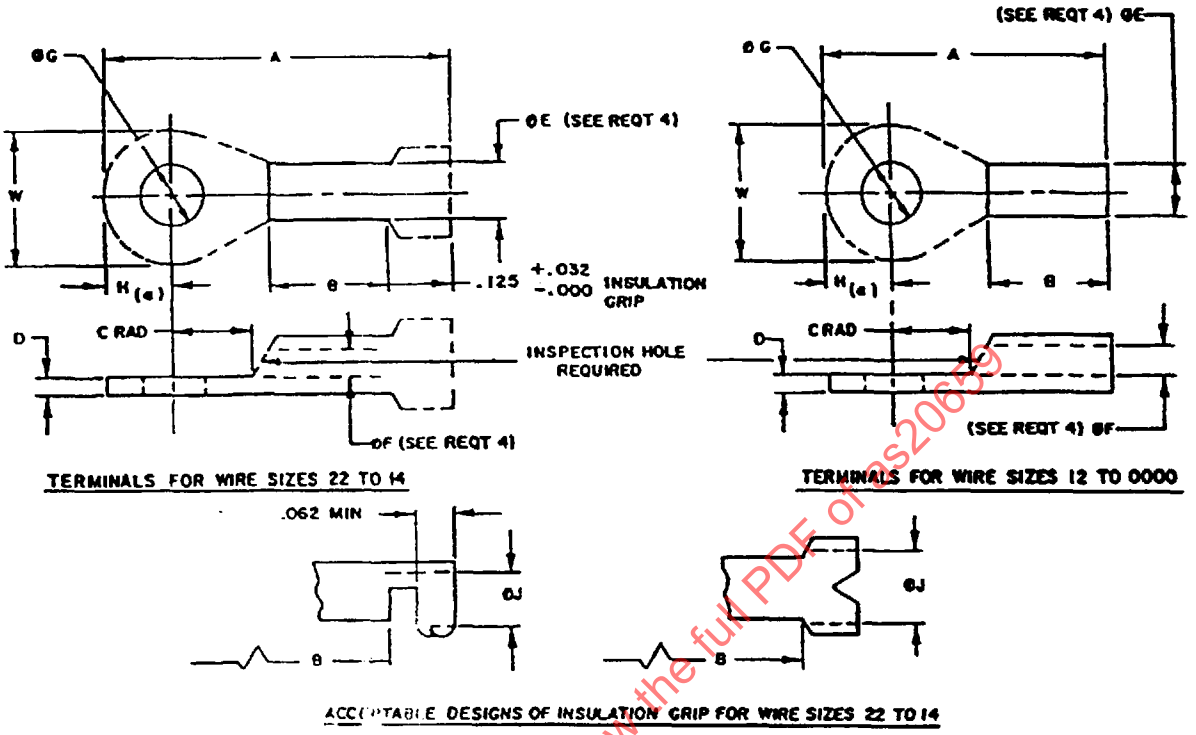
THE REQUIREMENTS FOR ACQUIRING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF MIL-T-7928 LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DoDISS) SPECIFIED IN THE SOLICITATION.



NOTES:

1. "H" MAX AND MIN DIMENSION SHALL BE ONE-HALF OF "W" MAX AND MIN DIMENSIONS, RESPECTIVELY.
2. CONTOUR INDICATED BY PHANTOM LINES MAY VARY FROM THAT SHOWN TO SUIT INDIVIDUAL MANUFACTURER'S DESIGN.
3. WHERE SPLIT BARREL CONSTRUCTION IS USED, THE SPLIT SHALL BE PERMANENTLY SEALED AND NOT OPEN AS THE RESULT OF CRIMPING.
4. DIMENSIONS ARE IN INCHES.
5. METRIC EQUIVALENTS (TO THE NEAREST .01 MM) ARE GIVEN FOR GENERAL INFORMATION ONLY AND ARE BASED UPON 1 INCH = 25.4 MM.

FIGURE 1. INSULATION GRIP AND TERMINALS

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REQUIREMENTS:

1. MATERIAL: SOFT COPPER, QQ-C-502, CLASS A.
   COPPER TUBING, ASTM B75-68.
   GILDING METAL, 95 PERCENT COPPER, 5 PERCENT ZINC.

2. FINISH: TIN-PLATED. SEE ACQUISITION SPECIFICATION.

3. QUALIFICATION TESTING: FOR QUALIFICATION, TERMINALS SHALL BE TESTED WITH ANY ONE OF THE FOLLOWING WIRES: MIL-W-5086, MIL-W-16878, MIL-W-22759/1, 9 OR 11, OR MIL-W-81381/1, 3 OR 7. TERMINALS SHALL BE TESTED WITH TOOLING AS FOLLOWS: MIL-C-22520/24 HAND CRIMPING TOOL FOR SIZES 22 THROUGH 10; MS25441 CRIMPING TOOL AND MS90485 CRIMPING DIES FOR SIZE 8 AND LARGER. MIL-C-2194 CABLES SHALL BE USED FOR TESTING MS20659-161 THROUGH MS20659-166 TERMINALS WITH MIL-C-22520/25 CRIMPING TOOL AND MIL-C-22520/24 CRIMPING TOOL.

4. AVERAGE DIAMETER OF "E" AND "F" SHALL BE WITHIN SPECIFICATION DIMENSIONS: MAX AND MIN DIMENSIONS DUE TO OVALIZATION SHALL BE WITHIN 3% OF SPECIFICATION REQUIREMENTS.

NOTES:

1. TABLE 1 SHOWS DASH NUMBERS AND DIMENSIONS. TABLE II SHOWS THE RELATIONSHIP BETWEEN WIRE SIZE AND NAVY CABLE SIZE.

2. MS20659-1 THRU -61 DASH NUMBERS COVERED BY REVISION B, DATED 23 MAY 1963, ARE CANCELLED AFTER 1 MARCH 1969.

3. INTERCHANGEABILITY RELATIONSHIP: DASH NUMBERS MS20659-101 THROUGH -161 CAN REPLACE THE CANCELLED MS20659-1 THROUGH -61 PARTS, RESPECTIVELY. THE CANCELLED MS20659-1 THROUGH -61 PARTS CAN NOT ALWAYS REPLACE THE MS20659-101 THROUGH -161 PARTS. EXISTING GOVERNMENT STOCK OF CANCELLED PARTS MAY BE USED UNTIL EXHAUSTED.

4. CERTAIN PROVISIONS OF THIS SPECIFICATION SHEET ARE THE SUBJECT OF INTERNATIONAL STANDARDIZATION AGREEMENT (ASCC AIR STD 12/4). WHEN AMENDMENT, REVISION, CANCELLATION OF THIS SPECIFICATION SHEET IS PROPOSED WHICH WILL MODIFY THE INTERNATIONAL AGREEMENT CONCERNED, THE PREPARING ACTIVITY WILL TAKE APPROPRIATE RECONCILIATION ACTION THROUGH INTERNATIONAL STANDARDIZATION CHANNELS, INCLUDING DEPARTMENTAL STANDARDIZATION OFFICES, TO CHANGE THE AGREEMENT OR MAKE OTHER APPROPRIATE ACCOMMODATIONS.

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TABLE I. DASH NUMBERS AND DIMENSIONS.

DASH NO.	WIRE SIZE	STUD SIZE	A MAX	B MIN	C MIN RAD	D MAX	D MIN	ØE	ØF	ØG MAX	ØG MIN	ØJ MIN	W MAX	W MIN	MIL-E-16366 (SHIPS) REFERENCE
167	22-18	#6 (.086)	.890	.250	.115	.045	.023	.140 .115	.073 .052	.098	.090	.120	.260	.178	
138		#8 (.112)			.125					.122	.114		.320	.210	L 33, 1-2
101		3/8 (.138)								.152	.142		.320	.210	L 33, 1-2
102		10 (.190)	.968		.172					.203	.193		.320	.305	L 36, 1-2
161		5/16 (.312)	1.187		.284					.338	.323		.540	.450	L 65, 1-2
125		3/8 (.375)	1.308		.328					.400	.385		.540	.520	L 66, 1-2
162		1/2 (.500)	1.530		.378					.525	.510		.733	.703	L 67, 1-2
139	16-14	#4 (.112)	.947	.250	.125	.053	.029	.162 .145	.095 .081	.122	.114	.153	.266	.234	
103		#6 (.138)	.955		.172					.152	.142		.327	.297	L 33, 2-1/2-4
126		#8 (.164)	.947		.125								.266	.234	
104		10 (.190)	.955	.250	.172					.203	.193		.327	.234	L 36, 2-1/2-4
163		5/16 (.312)	1.219		.284					.338	.323		.540	.450	L 65, 2-1/2-4
127		3/8 (.375)	1.290		.328					.400	.385		.540	.520	L 66, 2-1/2-4
164		1/2 (.500)	1.593		.378					.525	.510		.733	.703	L 67, 2-1/2-4
165	12-10	#6 (.138)	.955	.250	.202	.080	.037	.230 .210	.139 .129	.152	.142		.317	.290	L 33, 6-9
105		10 (.190)	.969		.172					.203	.193		.391	.365	L 36, 6-9
106		5/16 (.312)	1.156		.296					.338	.323		.547	.485	L 65, 6-9
128		3/8 (.375)	1.172		.328					.400	.385		.598	.536	L 66, 6-9
166		1/2 (.500)	1.718		.378					.525	.510		.733	.703	L 67, 6-9
140	8	#8 (.164)	1.150	.315	.234	.084	.038	.272 .260	.186 .176	.178	.168		.429	.386	
107		10 (.190)	1.219		.265					.203	.193		.478	.435	
141		1/4 (.250)			.296					.275	.260		.590	.547	
108		5/16 (.312)	1.297		.328					.338	.323		.590	.547	
129		3/8 (.375)			.378					.400	.385		.590	.547	
142		1/2 (.500)	1.845		.440					.525	.510		.833	.680	
130	6	10 (.190)	1.312	.375	.238	.084	.043	.316 .295	.232 .222	.203	.193		.503	.460	
109		1/4 (.250)			.265					.275	.260				
131		5/16 (.312)	1.437		.305					.338	.323		.623	.580	
110		3/8 (.375)			.328					.400	.385				
143		1/2 (.500)	1.676		.440					.525	.510		.833	.700	
144	4	10 (.190)	1.400	.437	.276	.096	.047	.380 .365	.290 .280	.203	.193		.628	.480	
111		1/4 (.250)								.275	.260				
132		5/16 (.312)	1.469		.308					.338	.323		.648	.605	
112		3/8 (.375)			.328					.400	.385				
145		1/2 (.500)	1.721		.440					.525	.510		.833	.710	

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TABLE I. DASH NUMBERS AND DIMENSIONS - CONTINUED.

DASH NO.	WIRE SIZE	STUD SIZE	A MAX	B MIN	C MIN RAD	D MAX	D MIN	ØE	ØF	ØG MAX	ØG MIN	ØJ MIN	K MAX	K MIN
146		10(.190)								.203	.193			
147		1/4(.250)								.275	.260			
145		5/16(.312)	1.732	.505	.343	.109	.064	.473	.355	.338	.323		.711	.668
114	2	3/8(.375)						.450	.355	.400	.385			
148		7/16(.437)	1.895	.565	.453	.125	.070	.563	.398	.463	.448		.804	.740
133		1/2(.500)						.505	.388	.525	.510			
115		1/4(.250)								.275	.260			
149		5/16(.312)	1.845	.565	.383	.125	.070	.527	.398	.338	.323		.783	.740
116	1	3/8(.375)						.505	.388	.400	.385			
150		7/16(.437)	1.980	.565	.453	.125	.070	.563	.398	.463	.448		.887	.740
134		1/2(.500)						.505	.388	.525	.510			
117		1/4(.250)								.275	.260			
151		5/16(.312)	2.045	.630	.418	.125	.070	.578	.458	.338	.323		.853	.810
118	0	3/8(.375)						.558	.438	.400	.385			
152		7/16(.437)	2.092	.630	.453	.125	.070	.578	.458	.463	.448		.903	.860
135		1/2(.500)						.558	.438	.525	.510			
153		1/4(.250)								.275	.260			
119		5/16(.312)	2.320	.700	.473	.129	.075	.640	.520	.338	.323		.956	.913
120	00	3/8(.375)						.620	.500	.400	.385			
154		7/16(.437)								.463	.448			
136		1/2(.500)								.525	.510			
155		5/16(.312)								.338	.323			
121	000	3/8(.375)	2.455	.718	.513	.140	.085	.714	.577	.400	.385		1.053	1.010
156		7/16(.437)						.690	.557	.463	.448			
122		1/2(.500)								.525	.510			
157		5/16(.312)								.338	.323			
123		3/8(.375)								.400	.385			
158		7/16(.437)	2.755	.734	.560	.150	.095	.784	.645	.463	.448		1.148	1.095
124	0000	1/2(.500)						.760	.622	.525	.510			
159		5/8(.625)								.666	.651			
160		3/4(.750)	2.955		.765					.785	.770			
137		7/8(.875)	2.971							.910	.895		1.268	1.200

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