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FEDERAL SUPPLY CLASS
5940**AS20659**

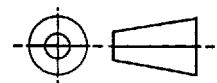
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THIRD ANGLE PROJECTION



PREPARED BY SUBCOMMITTEE AE-8C2

SAE The Engineering Society
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AEROSPACE STANDARD

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

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SHEET 1 OF 7

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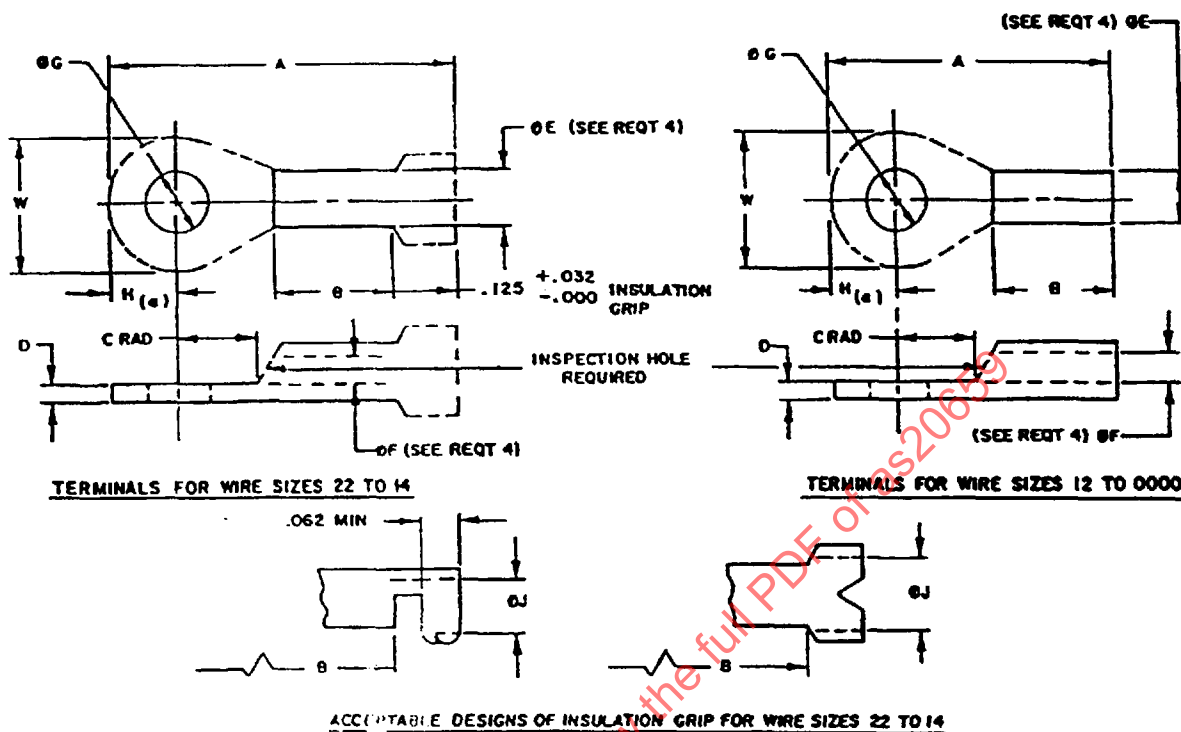
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THE REQUIREMENTS FOR ACQUIRING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF MIL-T-7928 LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DoDISS) SPECIFIED IN THE SOLICITATION.



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.

AEROSPACE STANDARD

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

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TABLE I. DASH NUMBERS AND DIMENSIONS.

DASH NO.	WIRE SIZE	STUD SIZE	A MAX	B MIN	C MIN RAD	D		Ø E	Ø F	Ø G		Ø J MIN	H		MIL-E-161366 (SHIPS) REFERENCE
						MAX	MIN			MAX	MIN		MAX	MIN	
167		21 (.086)			.115					.098	.090		.260	.178	
138		8 (.112)	.890		.125					.122	.114			.210	
101		6 (.138)			.172					.152	.142		.320	.305	L 33, 1-2
102		10 (.190)	.958	.250	.172	.045	.023	.140	.073	.203	.193	.120	.320	.305	L 36, 1-2
161	22-18	5/16 (.312)	1.187		.284			.115	.052	.338	.323		.540	.450	L 65, 1-2
125		3/8 (.375)	1.408		.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		4 (.112)	.947		.125					.122	.114		.266	.234	
103		6 (.138)	.955		.172					.152	.142		.327	.297	L 33, 2-1/2-4
126		8 (.170)	.947		.172					.203	.193		.327	.297	
104		10 (.190)	.955	.250	.172	.053	.029	.162	.095	.338	.323	.153	.327	.297	L 36, 2-1/2-4
163	16-14	5/16 (.312)	1.249		.284			.145	.081	.400	.385		.540	.450	L 65, 2-1/2-4
127		3/8 (.375)	1.290		.328					.525	.510		.733	.703	L 66, 2-1/2-4
164		1/2 (.500)	1.593		.378					.525	.510		.733	.703	L 67, 2-1/2-4
165		6 (.138)	.955		.202					.152	.142		.317	.290	L 33, 6-9
105		10 (.190)	.959		.172					.203	.193		.391	.365	L 36, 6-9
106		5/16 (.312)	1.156	.250	.296	.080	.037	.230	.139	.338	.323		.547	.485	L 65, 6-9
128	12-10	3/8 (.375)	1.172		.328			.210	.129	.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 (.164)	1.150		.234					.178	.168		.429	.386	
107		10 (.190)	1.219		.265					.203	.193		.478	.435	
141	8	1/4 (.250)	1.219	.315	.296	.084	.038	.272	.186	.275	.260		.590	.547	
108		5/16 (.312)	1.297		.328			.260	.176	.338	.323		.590	.547	
129		3/8 (.375)	1.445		.378					.400	.385		.833	.800	
142		1/2 (.500)	1.845		.440					.525	.510				
130		10 (.190)	1.312		.238					.203	.193		.503	.460	
109		1/4 (.250)	1.437		.265					.275	.260		.623	.580	
131	6	5/16 (.312)	1.437	.375	.305	.084	.043	.316	.232	.338	.323		.623	.580	
110		3/8 (.375)	1.676		.328			.295	.222	.400	.385		.833	.700	
143		1/2 (.500)	1.676		.440					.525	.510				
144		10 (.190)	1.400		.276					.203	.193		.628	.480	
111		1/4 (.250)	1.400		.308	.096	.047	.380	.290	.275	.260		.648	.605	
132	4	5/16 (.312)	1.469	.437	.328			.365	.280	.338	.323		.833	.710	
112		3/8 (.375)	1.721		.378					.400	.385				
145		1/2 (.500)	1.721		.440					.525	.510				

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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		Ø E	Ø F	Ø G		Ø J MIN	H	
						MAX	MIN			MAX	MIN		MAX	MIN
146		10(.190)								.203	.193			
147		1/4(.250)	1.732	.505	.343	.109	.074	.472	.355	.275	.260		.711	.668
148	2	5/16(.312)						.450		.338	.323			
149		3/8(.375)								.400	.385			
150		7/16(.437)	1.896		.453					.463	.448		.804	.740
151		1/2(.500)								.525	.510			
152		1/4(.250)	1.845		.383	.125	.070	.527	.398	.275	.260		.783	.740
153	1	5/16(.312)		.565				.505		.338	.323			
154		3/8(.375)								.400	.385			
155		7/16(.437)	1.980		.453					.463	.448		.887	.740
156		1/2(.500)								.525	.510			
157		1/4(.250)	2.045		.418	.125	.070	.578	.458	.275	.260		.853	.810
158	0	5/16(.312)		.630				.558		.338	.323			
159		3/8(.375)								.400	.385			
160		7/16(.437)	2.092		.453					.463	.448		.903	.860
161		1/2(.500)								.525	.510			
162		1/4(.250)	2.320			.129	.075	.640	.520	.275	.260			
163	00	5/16(.312)		.700				.620		.338	.323			
164		3/8(.375)								.400	.385			
165		7/16(.437)	2.455		.513	.140	.085	.714	.577	.463	.448	1.053	1.010	
166		1/2(.500)						.690		.525	.510			
167	000	5/16(.312)		.718						.338	.323			
168		3/8(.375)								.400	.385			
169		7/16(.437)	2.755		.560	.150	.095	.784	.645	.463	.448		1.148	1.095
170	0000	1/2(.500)		.734				.760		.525	.510			
171		5/8(.625)								.666	.651			
172		3/4(.750)	2.955		.765					.785	.770			
173		7/8(.875)	2.971							.910	.895		1.268	1.200