

MIL-DTL-55302/27K
w/AMENDMENT 2
1 June 2022
SUPERSEDING
MIL-DTL-55302/27K
w/AMENDMENT 1
10 July 2017

CONNECTORS, PRINTED CIRCUIT SUBASSEMBLY AND ACCESSORIES:
RECEPTACLE, 30 thru 140 CONTACT POSITIONS,
FOR PRINTED WIRING BOARDS (.100 SQ. GRID)

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-55302.

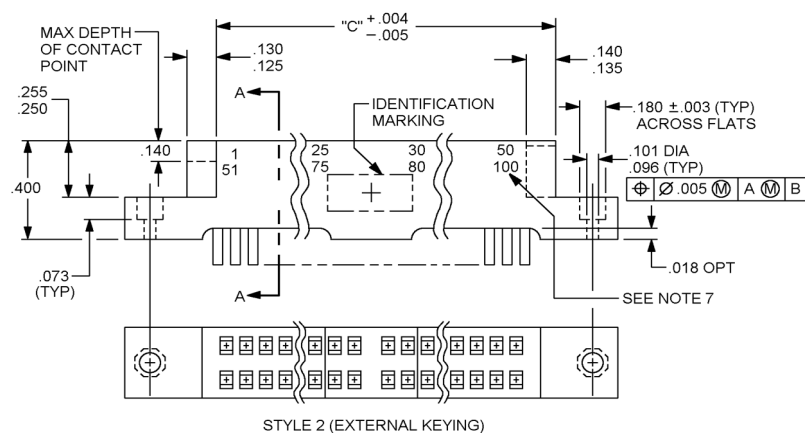
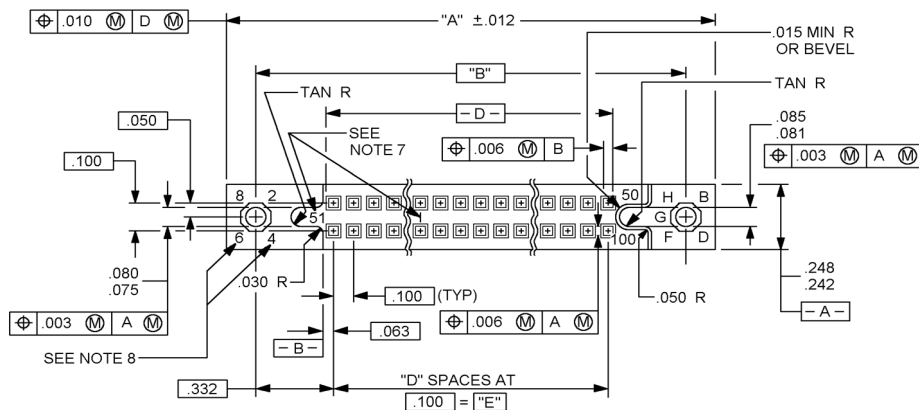


FIGURE 1. Connectors, plug, .100 (2.54 mm) square grid.

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Dash 1/ numbers	Number of contacts	Type	Dimensions					Contact identification numbers
			A	B	C	D	E	
91	30	I	2.355 (59.82)	2.065 (52.45)	1.665 (42.29)	14	1.400 (35.56)	1 - 15 16 - 30
100	30	II						
109	30	III						
118	30	VI						
127	30	VI						
136	30	VI						
145	30	V						
154	30	V						
163	30	V						
172	30	IV						
92	40	I	2.855 (72.52)	2.565 (65.15)	2.165 (54.99)	19	1.900 (48.26)	1 - 20 21 - 40
101	40	II						
110	40	III						
119	40	VI						
127	40	VI						
137	40	VI						
146	40	V						
155	40	V						
164	40	V						
173	40	IV						
93	50	I	3.355 (85.22)	3.065 (77.85)	2.665 (67.69)	24	2.400 (60.96)	1 - 25 26 - 50
102	50	II						
111	50	III						
120	50	VI						
129	50	VI						
138	50	VI						
147	50	V						
156	50	V						
165	50	V						
174	50	IV						
94	60	I	3.855 (97.92)	3.565 (90.55)	3.165 (80.39)	29	2.900 (73.66)	1 - 30 31 - 60
103	60	II						
112	60	III						
121	60	VI						
130	60	VI						
139	60	VI						
148	60	V						
157	60	V						
166	60	V						
175	60	IV						
95	70	I	4.355 (110.62)	4.065 (103.25)	3.665 (93.09)	34	3.400 (86.36)	1 - 35 36 - 70
104	70	II						
113	70	III						
122	70	VI						
131	70	VI						
140	70	VI						
149	70	V						
158	70	V						
167	70	V						
176	70	IV						

See footnote at end of table.

FIGURE 1. Connectors, receptacle, .100 (2.54 mm) square grid - Continued.

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Dash 1/ numbers	Number of contacts	Type	Dimensions					Post length type	Contact identification numbers
			A	B	C	D	E		
96	80	I	4.855	4.565	4.165	39	3.900	N/A	1 - 40
105	80	II	(123.32)	(115.95)	(105.79)		(99.06)	N/A	41 - 80
114	80	III						N/A	
123	80	VI						3	
132	80	VI						2	
141	80	VI						1	
150	80	V						3	
159	80	V						2	
168	80	V						1	
177	80	IV						N/A	
97	90	I	5.355	5.065	4.665	44	4.400	N/A	1 - 45
106	90	II	(136.02)	(128.65)	(118.49)		(111.76)	N/A	46 - 90
115	90	III						N/A	
124	90	VI						3	
133	90	VI						2	
142	90	VI						1	
151	90	V						3	
160	90	V						2	
169	90	V						1	
178	90	IV						N/A	
98	100	I	5.855	5.565	5.165	49	4.900	N/A	1 - 50
107	100	II	(148.72)	(141.35)	(131.19)		(124.46)	N/A	51 - 100
116	100	III						N/A	
125	100	VI						3	
134	100	VI						2	
143	100	VI						1	
152	100	V						3	
161	100	V						2	
170	100	V						1	
179	100	IV						N/A	
99	110	I	6.355	6.065	5.665	54	5.400	N/A	1 - 55
108	110	II	(161.42)	(154.05)	(143.89)		(137.16)	N/A	56 - 110
117	110	III						N/A	
126	110	VI						3	
135	110	VI						2	
144	110	VI						1	
153	110	V						3	
162	110	V						2	
171	110	V						1	
180	110	IV						N/A	

See footnote at end of table.

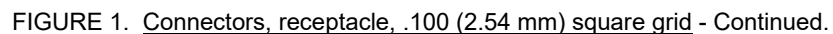
FIGURE 1. Connectors, receptacle, .100 (2.54 mm) square grid - Continued.

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Dash1/ numbers	Number of contacts	Type	Dimensions					Post length type	Contact identification numbers
			A	B	C	D	E		
190	120	I	6.855	5.565	6.162	59	5.900	N/A	1 - 60
194	120	II	(174.12)	(141.35)	(156.51)		(149.86)	N/A	61 - 120
198	120	III						N/A	
202	120	VI						3	
206	120	VI						2	
210	120	VI						1	
214	120	V						3	
218	120	V						2	
222	120	V						1	
226	120	IV						N/A	
191	130	I	7.355	7.065	6.665	64	6.400	N/A	1 - 65
195	130	II	(186.82)	(179.45)	(169.30)		(162.56)	N/A	66 - 130
199	130	III						N/A	
203	130	VI						3	
207	130	VI						2	
211	130	VI						1	
214	130	V						3	
219	130	V						2	
223	130	V						1	
227	130	IV						N/A	
192	134	I	7.555	7.265	6.865	66	6.600	N/A	1 - 67
196	134	II	(191.90)	(184.53)	(174.37)		(167.64)	N/A	68 - 134
200	134	III						N/A	
204	134	VI						3	
208	134	VI						2	
212	134	VI						1	
216	134	V						3	
220	134	V						2	
224	134	V						1	
228	134	IV						N/A	
193	140	I	7.855	7.565	7.165	69	6.900	N/A	1 - 70
197	140	II	(199.52)	(192.15)	(181.99)		(175.26)	N/A	71 - 140
201	140	III						N/A	
205	140	VI						3	
209	140	VI						2	
213	140	VI						1	
217	140	V						3	
221	140	V						2	
225	140	V						1	
229	140	IV						N/A	

1/ Dash numbers 91 through 180 and 190 through 229 are for style 2 (external keying) connectors.

FIGURE 1. Connectors, receptacle, .100 (2.54 mm) square grid - Continued.

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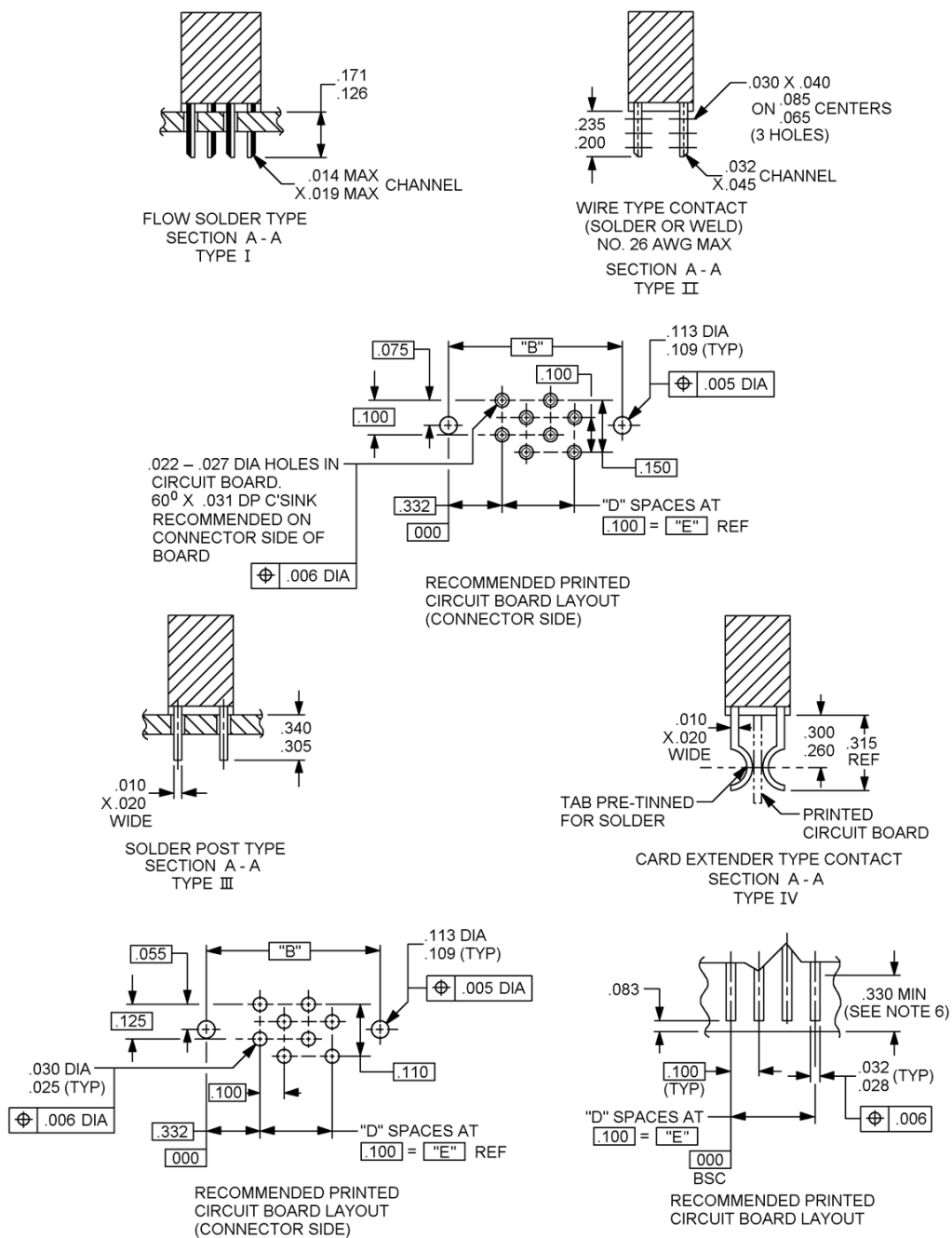
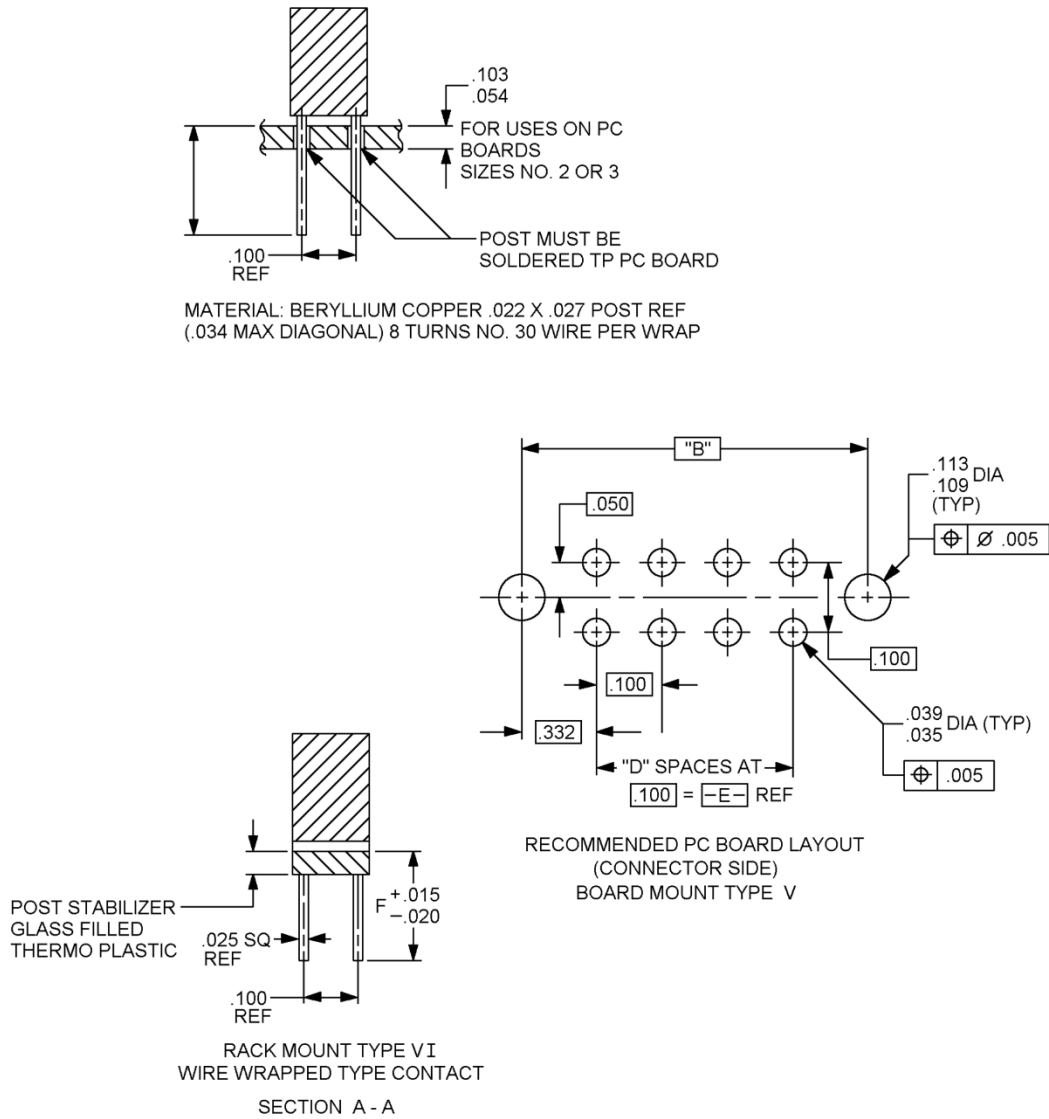


FIGURE 1. Connectors, receptacle, .100 (2.54 mm) square grid - Continued.

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Post length type	F
1	.405 (10.29 mm)
2	.565 (14.35 mm)
3	.725 (18.42 mm)

FIGURE 1. Connectors, receptacle, .100 (2.54 mm) square grid - Continued.

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Dash <u>1</u> / numbers	Number of contacts	Dimensions					Contact identification numbers
		A	B	C	D	E	
181	30	2.355 (59.82)	2.065 (52.45)	1.665 (42.29)	14	1.400 (35.56)	1 - 15 16 - 30
182	40	2.855 (72.52)	2.656 (67.46)	2.165 (54.99)	19	1.900 (48.26)	1 - 20 21 - 40
183	50	3.355 (85.22)	3.065 (77.85)	2.665 (67.69)	24	2.400 (60.96)	1 - 25 26 - 50
184	60	3.855 (97.92)	3.565 (90.55)	3.165 (80.39)	29	2.900 (73.66)	1 - 30 31 - 60
185	70	4.355 (110.62)	4.065 (103.25)	3.665 (93.09)	34	3.400 (86.36)	1 - 35 36 - 70
186	80	4.855 (123.32)	4.656 (118.26)	4.165 (105.79)	39	3.900 (99.06)	1 - 40 41 - 80
187	90	5.355 (136.02)	5.065 (128.65)	4.665 (118.49)	44	4.400 (111.76)	1 - 45 46 - 90
188	100	5.855 (148.72)	5.565 (141.35)	5.165 (131.19)	49	4.900 (124.46)	1 - 50 51 - 100
189	110	6.355 (161.42)	6.065 (154.05)	5.665 (143.89)	54	5.400 (137.16)	1 - 55 56 - 110

1/ Dash numbers 181 through 189 are for styles 03 (silicon rubber gasket) connectors.

FIGURE 1. Connectors, receptacle, .100 (2.54 mm) square grid - Continued.

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Inches	mm	Inches	mm	Inches	mm
.003	0.08	.045	1.14	.130	3.30
.004	0.10	.050	1.27	.135	3.43
.005	0.13	.054	1.37	.136	3.45
.006	0.15	.055	1.40	.140	3.56
.010	0.25	.063	1.60	.150	3.81
.012	0.30	.065	1.65	.171	4.34
.014	0.36	.073	1.85	.180	4.57
.015	0.38	.075	1.91	.200	5.08
.018	0.46	.080	2.03	.235	5.97
.019	0.48	.081	2.06	.242	6.15
.020	0.51	.083	2.11	.248	6.30
.022	0.56	.085	2.16	.250	6.35
.025	0.64	.096	2.44	.255	6.48
.027	0.69	.100	2.54	.260	6.60
.028	0.71	.101	2.57	.300	7.62
.030	0.76	.103	2.62	.305	7.75
.032	0.81	.109	2.77	.315	8.00
.034	0.86	.110	2.79	.330	8.38
.035	0.89	.113	2.87	.332	8.43
.039	0.99	.125	3.18	.340	8.64
.040	1.02	.126	3.20	.400	10.16

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified, tolerances are ± 0.005 (0.13 mm) on three place decimals and $\pm 2^\circ$ on angles.
4. These connectors mate with connectors specified in MIL-DTL-55302/26 and MIL-DTL-55302/110.
5. Use printed circuit boards with the type III receptacle and type V receptacle.
6. Minimum pad length on printed circuit board.
7. Numbers indication, every 5 cavities marked or molded on side. Numbers indicating end cavities and lines indicating every 5 cavities molded or marked on mating face.
8. Location indicators embossed on surface.

FIGURE 1. Connectors, receptacle, .100 (2.54 mm) square grid - Continued.

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REQUIREMENTS:

Design and construction:

Dimensions and configuration: See figure 1.

Material:

Insulator body: Insulator material shall be in accordance with MIL-DTL-55302 or type GLCP-30F in accordance with ASTM D5138 or MIL-M-24519.

Contact material: Contact material in accordance with MIL-DTL-55302 or beryllium copper alloy C17400 in accordance with ASTM B768.

Gasket: Silicon rubber.

Plating:

Engagement area: Gold in accordance with MIL-DTL-55302 for .100 inch (2.54 mm) length, over nickel all over in accordance with MIL-DTL-55302.

Termination area: Tin lead over nickel in accordance with MIL-DTL-55302 for the lengths:

.165 inch (4.19 mm) minimum length for type I, .200 inch (5.08 mm) minimum length for type II.
.300 inch (7.62 mm) minimum length for type III, .140 inch (3.56 mm) minimum length for type IV.

Termination for type V and VI contacts:

Gold over nickel in accordance with MIL-DTL-55302 for the entire termination length.

Contact identification: See figure 1.

Contact rating: 3.0 amperes maximum per contact, 2.25 amperes continuous per contact at 75°F.

Keying: See MIL-DTL-55302/31.

Oversized pin exclusions (sockets only): .0465 diameter pin.

Contact separation force: The connector shall meet the requirements as specified in MIL-DTL-55302/29.

Wire size: Number 26 AWG maximum with type II, solder eyelet contact for wire termination. Number 30 AWG may be used with type V and VI wrappost contacts.

Resistance to test probe damage: The connector shall meet the requirements as specified in MIL-DTL-55302/30.

Mating and unmating: The maximum mating force in pounds shall be the number of contacts multiplied by .25 and the withdrawal force in pounds shall be a minimum of .025 times the number of contacts and shall not exceed the measured insertion force.

Contact resistance: No individual contact pair shall have a resistance exceeding .020 ohm.

Contact retention: Not applicable.

Dielectric withstanding voltage:

Sea level: 900 volts rms.

High altitude: 200 volts rms.

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Replacement contacts: See MIL-DTL-55302/32.

Contact removal tool: See SAE-AS81969/9-01 for type I through type V. Use Tyco Electronics tool 1-265871-7 for type V and VI.

Part or Identifying Number (PIN): M55302/27-(dash number from figure 1).

Patent number 3,404,367. The Government has a royalty free license under this patent for the benefit of manufacturers of the item either for the Government or for use in equipment to be delivered to the Government.

Supersession data: See table I.

TABLE I. Style 1 (Internal keying) supersession data.

Style 1 (internal keying) PIN	Superseding style 2 (external keying) PIN ^{1/}
M55302/27-25	M55302/27-91
M55302/27-26	M55302/27-100
M55302/27-27	M55302/27-109
M55302/27-28	M55302/27-172
M55302/27-37	M55302/27-163
M55302/27-38	M55302/27-136
M55302/27-39	M55302/27-154
M55302/27-40	M55302/27-127
M55302/27-41	M55302/27-145
M55302/27-42	M55302/27-118
M55302/27-29	M55302/27-92
M55302/27-30	M55302/27-101
M55302/27-31	M55302/27-110
M55302/27-32	M55302/27-173
M55302/27-43	M55302/27-164
M55302/27-44	M55302/27-137
M55302/27-45	M55302/27-155
M55302/27-46	M55302/27-128
M55302/27-47	M55302/27-146
M55302/27-48	M55302/27-119
M55302/27-01	M55302/27-93
M55302/27-02	M55302/27-102
M55302/27-03	M55302/27-111
M55302/27-04	M55302/27-174
M55302/27-49	M55302/27-165
M55302/27-50	M55302/27-138
M55302/27-51	M55302/27-156
M55302/27-52	M55302/27-129
M55302/27-53	M55302/27-147
M55302/27-54	M55302/27-120
M55302/27-05	M55302/27-94
M55302/27-06	M55302/27-103
M55302/27-07	M55302/27-112
M55302/27-08	M55302/27-175
M55302/27-55	M55302/27-166
M55302/27-56	M55302/27-139
M55302/27-57	M55302/27-157
M55302/27-58	M55302/27-130
M55302/27-59	M55302/27-148
M55302/27-60	M55302/27-121

See footnote at end of table.

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TABLE I. Style 1 (Internal keying) supersession data - Continued.

Style 1 (internal keying) PIN	Superseding style 2 (external keying) PIN ^{1/}
M55302/27-33	M55302/27-95
M55302/27-34	M55302/27-104
M55302/27-35	M55302/27-113
M55302/27-36	M55302/27-176
M55302/27-61	M55302/27-167
M55302/27-62	M55302/27-140
M55302/27-63	M55302/27-158
M55302/27-64	M55302/27-131
M55302/27-65	M55302/27-149
M55302/27-66	M55302/27-122
M55302/27-09	M55302/27-96
M55302/27-10	M55302/27-105
M55302/27-11	M55302/27-114
M55302/27-12	M55302/27-177
M55302/27-67	M55302/27-168
M55302/27-68	M55302/27-141
M55302/27-69	M55302/27-159
M55302/27-70	M55302/27-132
M55302/27-71	M55302/27-150
M55302/27-72	M55302/27-123
M55302/27-13	M55302/27-97
M55302/27-14	M55302/27-106
M55302/27-15	M55302/27-115
M55302/27-16	M55302/27-178
M55302/27-73	M55302/27-169
M55302/27-74	M55302/27-142
M55302/27-75	M55302/27-160
M55302/27-76	M55302/27-133
M55302/27-77	M55302/27-151
M55302/27-78	M55302/27-124
M55302/27-17	M55302/27-98
M55302/27-18	M55302/27-107
M55302/27-19	M55302/27-116
M55302/27-20	M55302/27-179
M55302/27-79	M55302/27-170
M55302/27-80	M55302/27-143
M55302/27-81	M55302/27-161
M55302/27-82	M55302/27-134
M55302/27-83	M55302/27-152
M55302/27-84	M55302/27-125
M55302/27-21	M55302/27-99
M55302/27-22	M55302/27-108
M55302/27-23	M55302/27-117
M55302/27-24	M55302/27-180
M55302/27-85	M55302/27-171
M55302/27-86	M55302/27-144
M55302/27-87	M55302/27-162
M55302/27-88	M55302/27-135
M55302/27-89	M55302/27-153
M55302/27-90	M55302/27-126

^{1/} Style 2 (external keying) receptacles can be mated to existing style 1(internal keying) plugs.

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Group qualification: See table II.

TABLE II. Group qualification.

Qualification of any of the following connectors ^{1/ 2/}	Qualifies the following connectors	Retains qualification on the following
M55302/24-**	M55302/24-**	M55302/24-** M55302/25-** M55302/27-**
M55302/25-**	M55302/24-** M55302/25-** M55302/27-**	
M55302/27-**	M55302/24-** M55302/27-**	

^{1/} For initial qualification, connectors with the largest number of contact positions from the left-hand column shall be used to obtain qualification for parts in corresponding center column.

^{2/} For qualification retention, data may be supplied on any two parts from the left-hand column in order to retain qualification for the parts listed in the right-hand column.

Amendment notations. The margins of this specification are marked with vertical lines to indicate where modifications from this amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents. In addition to MIL-DTL-55302, this document references the following:

MIL-DTL-55302/26
MIL-DTL-55302/29
MIL-DTL-55302/30
MIL-DTL-55302/31
MIL-DTL-55302/32
MIL-DTL-55302/110
MIL-M-24519
ASTM B768
ASTM D5138
SAE-AS81969/9

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5935-2022-106)

Review activities:
Army - AR, AT, AV, CR4, MI
Navy - AS, MC, OS, SH
Air Force - 19

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