

Contact Specifications

DS Series • MIL-DTL-38999 Series II Style Connectors

Wire & Crimp Contact Dimensions

Contact Size	Wire Range		Potential Drop (Millivolts)	Crimp Well Diameter	Min Crimp Well Depth	Wire Jacket Diameter Sealing Range		Contact Retention Min Axial Load Pounds (Newtons)
	AWG	Dia				Min	Max	
#22D	22, 24, 26, 28	.012-.025 (.32-.64)	<73	.035 (.89)	.141 (3.58)	.030 (.76)	.054 (1.37)	10 (44.5)
#22M	24, 26, 28	.012-.020 (.32-.51)	<45	.028 (.71)	.141 (3.58)	.030 (.76)	.054 (1.37)	10 (44.5)
#22	22, 24, 26	.016-.025 (.41-.64)	<73	.037 (.93)	.141 (3.58)	.034 (.86)	.086 (2.18)	10 (44.5)
#20	20, 22, 24	.020-.032 (.51-.81)	<55	.047 (1.19)	.209 (5.31)	.040 (1.02)	.083 (2.11)	15 (66.7)
#16	16, 18, 20	.032-.050 (.81-1.29)	<49	.067 (1.70)	.209 (5.31)	.065 (1.65)	.109 (2.77)	25 (111.2)
#12	12, 14	.064-.080 (1.62-2.05)	<42	.100 (2.54)	.209 (5.31)	.097 (2.46)	.142 (3.61)	30 (133.4)

Dimensions are in inches (mm) unless otherwise noted.

Wire & Solder Contact Dimensions (Hermetic)

Contact Size	Wire Range		Potential Drop (Millivolts)	Solder Well Diameter	Min Solder Well Depth
	AWG	Dia			
#22D	22, 24, 26, 28	.012-.025 (.32-.64)	<85	.036 (.91)	.094 (2.39)
#22M	24, 26, 28	.012-.020 (.32-.51)	<60	.029 (.74)	.094 (2.39)
#22	22, 24, 26	.016-.025 (.41-.64)	<85	.036 (.91)	.094 (2.39)
#20	20, 22, 24	.020-.032 (.51-.81)	<60	.044 (1.12)	.125 (3.18)
#16	16, 18, 20, 22	.025-.050 (.64-1.29)	<85	.078 (1.98)	.141 (3.58)
#12	12, 14	.064-.080 (1.62-2.05)	<82	.116 (2.95)	.141 (3.58)

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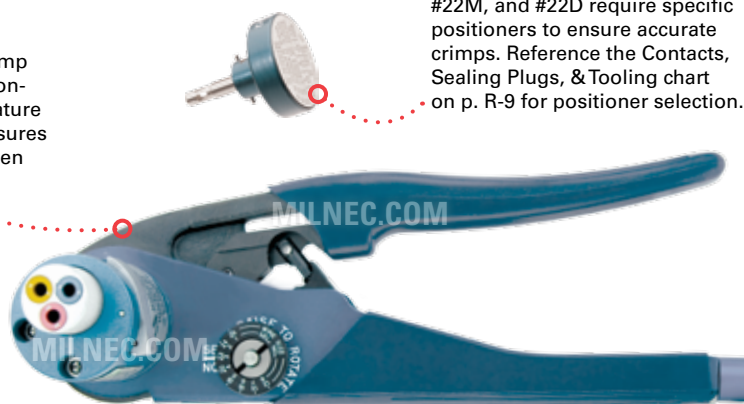
Current Rating By Contact Size & Wire Size

Wire Size (AWG)	Contact Size					
	#22D	#22M	#22	#20	#16	#12
28	1.5A	1.5A	-	-	-	-
26	2A	2A	-	-	-	-
24	3A	3A	3A	3A	-	-
22	5A	5A	5A	5A	-	-
20	-	-	-	7.5A	7.5A	-
18	-	-	-	-	10A	-
16	-	-	-	-	13A	-
14	-	-	-	-	-	17A
12	-	-	-	-	-	23A

Test ratings only. A connector cannot withstand maximum current through all contacts continuously. Please note that the establishment of electrical safety factors is left entirely in the designer's hands, since he or she is in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular circuit.

Foolproof Crimp Tool

A crimp tool provides reliable crimp termination of contacts for mission-critical applications. Our tools feature an 8-imperson crimp, which ensures maximum tensile strength between wire and contact. See p. R-56 for complete crimping tool kits.



Get the Right Positioner

DS Series contact sizes #22, #22M, and #22D require specific positioners to ensure accurate crimps. Reference the Contacts, Sealing Plugs, & Tooling chart on p. R-9 for positioner selection.

Contact Derating Specifications

Service Rating	Max Operating Voltage (Sea Level)		Test Voltage			
	AC (RMS)	DC	Sea Level AC (RMS)	50,000 ft	70,000 ft	110,000 ft
				AC (RMS)	AC (RMS)	AC (RMS)
M	400	500	1,300	550	350	200
N	300	450	1,000	400	260	200
I	600	850	1,800	600	400	200
II	900	1,250	2,300	800	500	200

Test ratings only. A connector cannot withstand maximum current through all contacts continuously. Please note that the establishment of electrical safety factors is left entirely in the designer's hands, since he or she is in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular circuit.

Shielding Effectiveness

Freq Range (Mhz)	Attenuation Minimum (dB)
100	90
200	88
300	88
400	87
800	85
1,000	85
1,500	69
2,000	65
3,000	61
4,000	58
6,000	55
10,000	50

Effective over a range of 100 MHz to 10 GHz with a minimum 50 dB effectiveness at 10 GHz, in accordance with test method EIA-364-10.

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Contacts, Sealing Plugs, & Tooling

Contact Size	Contact Style	Part Number	Wire Size (AWG)	Wire Range (Dia)	Jacket Strip Length	Crimping Tool	Positioner	Insertion Tool	Extraction Tool
#22D	Standard Pin	DSPP22	22, 24, 26, 28	.012-.025 (.32-.64)	.157 (4.00)	TK201	TP209	TN801	TX802
	Standard Socket	DSSS22					TP206		
	Sealing Plug	DSSP22					No Tooling Required		
#22M	Standard Pin	DSPP22M	24, 26, 28	.012-.020 (.32-.51)	.157 (4.00)	TK201	TP209	TN801	TX802
	Standard Socket	DSSS22M					TP206		
	Sealing Plug	DSSP22M					No Tooling Required		
#22	Standard Pin	DSPP22A	22, 24, 26	.016-.025 (.41-.64)	.157 (4.00)	TK201	TP209	TN803	TX804
	Standard Socket	DSSS22A					TP206		
	Sealing Plug	DSSP22A					No Tooling Required		
#20	Standard Pin	DSPP20	20, 22, 24	.020-.032 (.51-.81)	.197 (5.00)	TK101A	TP104 (Turret)	TN805	TX806
	Standard Socket	DSSS20							
	Sealing Plug	DSSP20					No Tooling Required		
#16	Standard Pin	DSPP16	16, 18, 20	.032-.050 (.81-1.29)	.236 (6.00)	TK101A	TP104 (Turret)	TN807	TX808
	Standard Socket	DSSS16							
	Sealing Plug	DSSP16					No Tooling Required		
#12	Standard Pin	DSPP12	12, 14	.064-.080 (1.62-2.05)	.236 (6.00)	TK101A	TP104 (Turret)	TN809	TX810
	Standard Socket	DSSS12							
	Sealing Plug	DSSP12					No Tooling Required		

Dimensions are in inches (mm) unless otherwise noted.

Thermocouple Contacts

Contact Size	Contact Style	Part Number	Wire Size (AWG)	Wire Range (Dia)	Jacket Strip Length	Crimping Tool	Positioner	Insertion Tool	Extraction Tool					
#22D Alumel	Pin	DSPA22	22, 24, 26, 28	.012-.025 (.32-.64)	.157 (4.00)	TK201	TP209	TN801	TX802					
	Socket	DSSA22								TP206				
#22D Chromel	Pin	DSPR22									TP209			
	Socket	DSSR22										TP206		
#22D Constantan	Pin	DSPK22									TP209			
	Socket	DSSK22										TP206		
#22D Iron	Pin	DSPE22					TP209							
	Socket	DSSE22						TP206						
#20 Alumel	Pin	DSPA20					20, 22, 24		.020-.032 (.51-.81)	.197 (5.00)	TK101A	TN805	TX806	
	Socket	DSSA20						TP104 (Turret)						
#20 Chromel	Pin	DSPR20												TP104 (Turret)
	Socket	DSSR20												
#20 Constantan	Pin	DSPK20	TP104 (Turret)											
	Socket	DSSK20		TX808										
#20 Iron	Pin	DSPE20	TP104 (Turret)											
	Socket	DSSE20		TX808										
#16 Alumel	Pin	DSPA16	16, 18, 20		.032-.050 (.81-1.29)	.236 (6.00)		TK101A				TN807	TX808	
	Socket	DSSA16		TP104 (Turret)										
#16 Chromel	Pin	DSPR16												TP104 (Turret)
	Socket	DSSR16												
#16 Constantan	Pin	DSPK16					TP104 (Turret)							
	Socket	DSSK16							TX808					
#16 Iron	Pin	DSPE16					TP104 (Turret)							
	Socket	DSSE16		TX808										

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Coax Contacts

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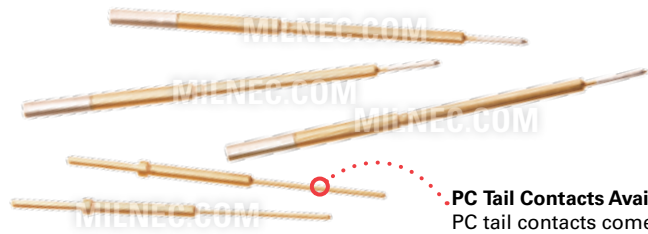
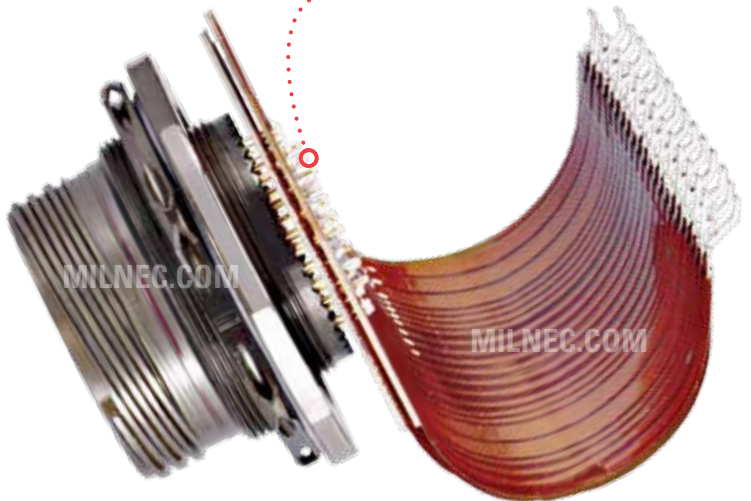
Cable	Contact Size	Part Number		Crimping Tools		Positioners		Installation Tools	
		Pin	Socket	Inner	Outer	Inner	Outer	Insertion	Extraction
RG-178B/U RG-196A/U	#16	DSPX16-002	DSSX16-003		TK401	TP235	TP402	TN807	TX808
		DSPX16-004	DSSX16-005						
RG-161/U RG-174A/U RG-179B/U RG-187A/U RG-188A/U RG-316/U Haveg 8100207 Times (HS-179) AA3248 Teledyne 11299	#12	DSPX12-006	DSSX12-007	TK201					
					TK3101	TP234	TP3102	TN809	TX810
RG-180B/U RG-195A/U Raychem 9528A1318		DSPX12-008	DSSX12-009						

Custom PC Tail Lengths & Dimensions

We realize that every engineering application is different, that's why we're able to provide custom PC tail contacts for MIL-DTL-38999 Series II connectors. Options include custom tail lengths, shoulder extensions, or 90° angled configurations. For applications requiring high-speed data transmission, we can also provide coax, twinax, and quadrx contacts with PC tails for termination directly to your PC board to provide the highest signal integrity. Please contact an authorized distributor for ordering assistance.

Get PC Tail Contacts Easily

Ordering connectors pre-loaded with PC tail contacts ready for termination to PC boards or flex cable has never been easier!



PC Tail Contacts Available
PC tail contacts come in a variety of tail lengths to meet your design requirements.

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