



**Micro-D
Connector
MIL-PRF-83513**

Performance Data Summary

Electrical:

Contacts: Pin#24 AWG flexible pin
 Socket #24 AWG precision machined barrel
 Wire range #24 AWG to #30 AWG solid and stranded other dimension on request
Contact resistance: (voltage drop)
 25 millivolts max. at 3 amps, 25° +/- 3° C
Current rating: 3 amp max. per contact
Dielectric withstanding voltage: Volts RMS 60 Hz at room ambient.

	Solder pots	Wire Terminations & Transitions Block
Sea Level	600	800
70,000 ft.	150	200

Insulation resistance: 5.000 megohms minimum (@ 500 VDC) at ambient room temperature
Magnetic permeability: 2 mu max.

Mechanical:

Contact spacing: .050" (1,27 mm) centres
Contact engagement & Separation:

	Engaging Force		Separation Force
	Typical	Maximum	Minimum
Normal	6.0 oz.	8.0 oz.	0.5 oz.

Mating force maximum: Calculated as 10 oz. times the number of contacts.

Environmental:

Temperature Range: - 55°C to +125°C
Vibration: No discontinuity in excess of 1µ sec. when tested in accordance with MIL-STD-1344, Method 2005 test condition IV.
Shock: No discontinuity in excess of 1µ sec. when tested in accordance with MIL-STD 1344, Method 2004, test condition E
Durability: No mechanical or electrical defects detrimental to the function of the connectors after 500 cycles of mating and unmating.
Humidity: After exposure to humidity as specified by MIL-STD-1344, method 1002, Type II, IR shall be 1 megohm min following step 7a of method 1002 and 1000 megohm min after 24 hours of conditioning per method 1002.
Salt spray: Connectors shall meet the performance requirements of contact resistance, mating and unmating forces, and contact retention after being subjected to the 48-hour 5% solution salt spray test per MIL-STD-1344, method 1001, condition B.
Fluid immersion: Unmated connectors after being fully immersed in one of the following fluids, for the prescribed time, will mate at a force of 10 oz. times the number of contacts or less:
 Freon - 2 hours
 Perchloroethylene - 2 hours
 Lubricating oil per MIL-L-23699 - 20 hours
Insert retention: Inserts will withstand a 50 lb. per square inch load in either direction. (CMK only)
Crimp termination tensile strength:
 unassembled contacts with crimped stranded wire terminations:
 Wires will not pull out of contacts when the following axial loads are applied:
 #24 AWG, 5 lbs.
 #26 AWG, 4 lbs.
 #28 AWG, 3 lbs.

Materials and Finishes

Contacts: Copper alloy plated with 0.00050" gold over copper flash per MIL-G-45204 Type II

CMK-Metal Shell:

Insulator - Ryton R4, Polyphenylene Sulphide per Mil-M-24519
 Interfacial sealing - Flourosilicone Rubber per Mil-R-25988 (socket side only)
 Body shell - Aluminium alloy high grade plated
 Cadmium per QQ-P-416
 Nickel electroless per MIL-C-26074

Transition block shell:

Ryton R4, Polyphenylene Sulphide per Mil-M-24519
 Potting material: Epoxy black

CMD - Plastic Shell:

Insulator/Body - Diallylphtalate per MIL-M-14, SDGF type
 Polycarbonate per Fed. Std.-LP393A
 Amendment 1 and OS 12531

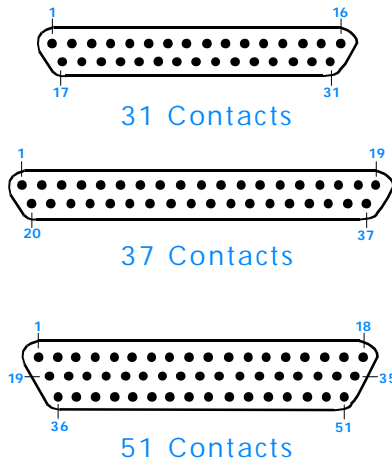
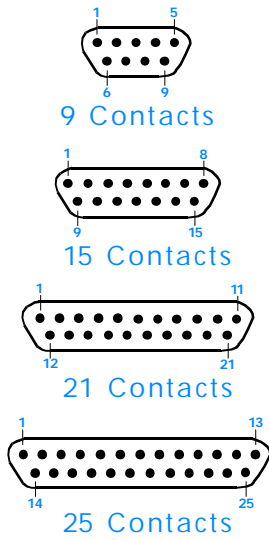
Nylon, glass filled per Fed. Std.-LP395
 Polyester, glass filled per MIL-M-24519
 Polyphenylene Sulfide per MIL-M-24519

Wire terminations:

Solid copper per QQ-W-343 gold plated per MIL-G-45204
 Stranded Teflon® insulated per MIL-W-16878
 Stranded Teflon® insulated per MIL-W-22759/11, /33
 Solid copper per QQ-W-343 solder dipped (Transition block)

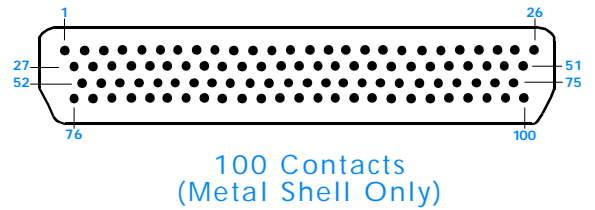
Contact Arrangements - CMK Shell Dimensions

Contact Arrangements



Face View from pin insert
Socket side is mirror image

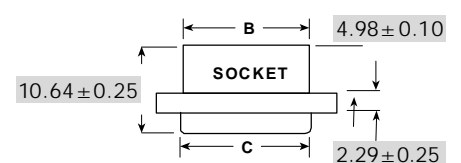
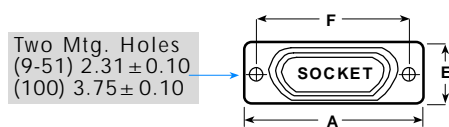
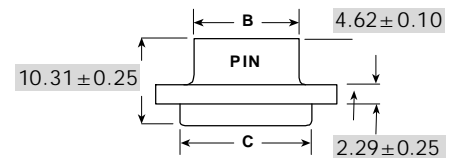
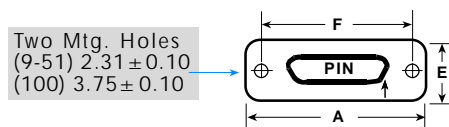
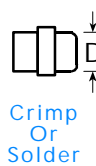
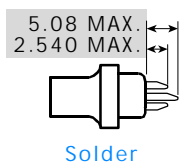
CMK metal shell are not designed to intermate or interchange with CMD plastic shells. If metal/plastic intermating is desired use CMDM connectors which intermate with CMD.



CMK Shell Dimensions



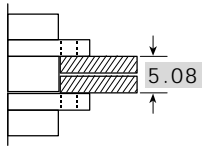
PARTNUMBER	A +/- 0.25mm	Bmax.	C +/- 0.35 mm	Dmax.	E +/- 0.25 mm	F +/- 0.13 mm
CMK-9P	19,70	8,45	9,91	6,85	7,55	14,35
9S	19,70	10,20	9,91	6,85	7,55	14,35
CMK-15P	23,50	12,25	13,60	6,85	7,55	18,15
15S	23,50	14,00	13,60	6,85	7,55	18,15
CMK-21P	27,30	16,10	17,45	6,85	7,55	21,95
21S	27,30	17,85	17,45	6,85	7,55	21,95
CMK-25P	29,85	18,60	19,95	6,85	7,55	24,50
25S	29,85	20,35	19,95	6,85	7,55	24,50
CMK-31P	33,65	21,15	23,80	6,85	7,55	28,30
31S	33,65	24,20	23,80	6,85	7,55	28,30
CMK-37P	37,45	26,25	27,60	6,85	7,55	32,15
37S	37,45	28,00	27,60	6,85	7,55	32,15
CMK-51P	36,20	25,00	26,30	7,85	8,65	30,85
51S	36,20	26,70	26,30	7,85	8,65	30,85
CMK-100P	54,85	35,15	36,30	9,15	9,75	45,70
100S	54,85	38,30	36,30	9,15	9,75	45,70



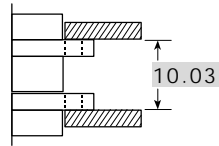
All dimensions in mm.

CMK Panel Mounting - Cutout Dimensions

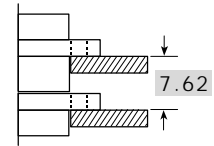
Mounting Dimensions - CMK Metal



Plug and Receptacle rear mounted



Plug and Receptacle front mounted



Plug front mounted
Receptacle rear mounted

NUMBER OF CONTACTS	Fig.	A+0.1 -0	B+0.1 -0	C+0.13 -0
9	1	10,25	6,95	14,50
	2	10,30	6,55	14,50
15	1	14,05	6,95	18,30
	2	14,10	6,55	18,30
21	1	17,90	6,95	22,10
	2	17,95	6,55	22,10
25	1	20,40	6,95	24,65
	2	20,45	6,55	24,65
31	1	24,25	6,95	28,45
	2	24,30	6,55	28,45
37	1	28,05	6,95	32,25
	2	28,10	6,55	32,25
51	1	26,75	8,00	31,00
	2	26,80	7,60	31,00

Mounting Dimensions place receptacle at the board edge when used with 90° angle mounting bracket.

FIGURE 1
FRONT MOUNTING

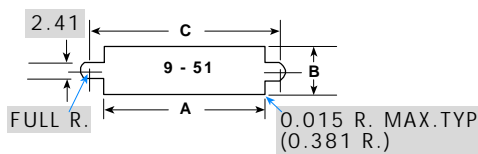
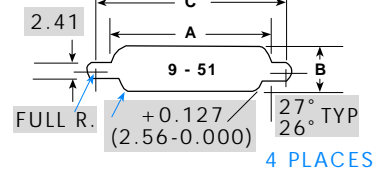
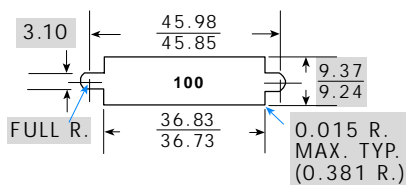


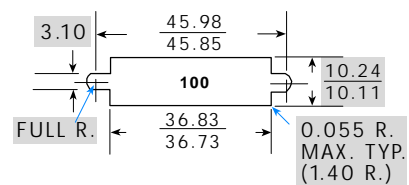
FIGURE 2
REAR MOUNTING



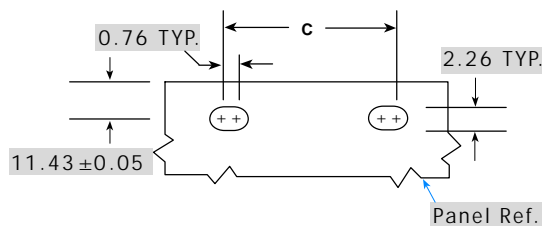
FRONT MOUNTING



REAR MOUNTING

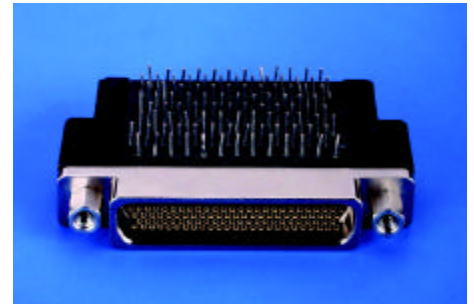
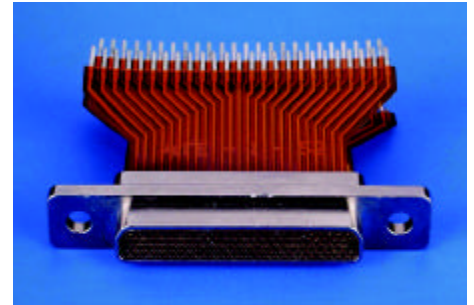
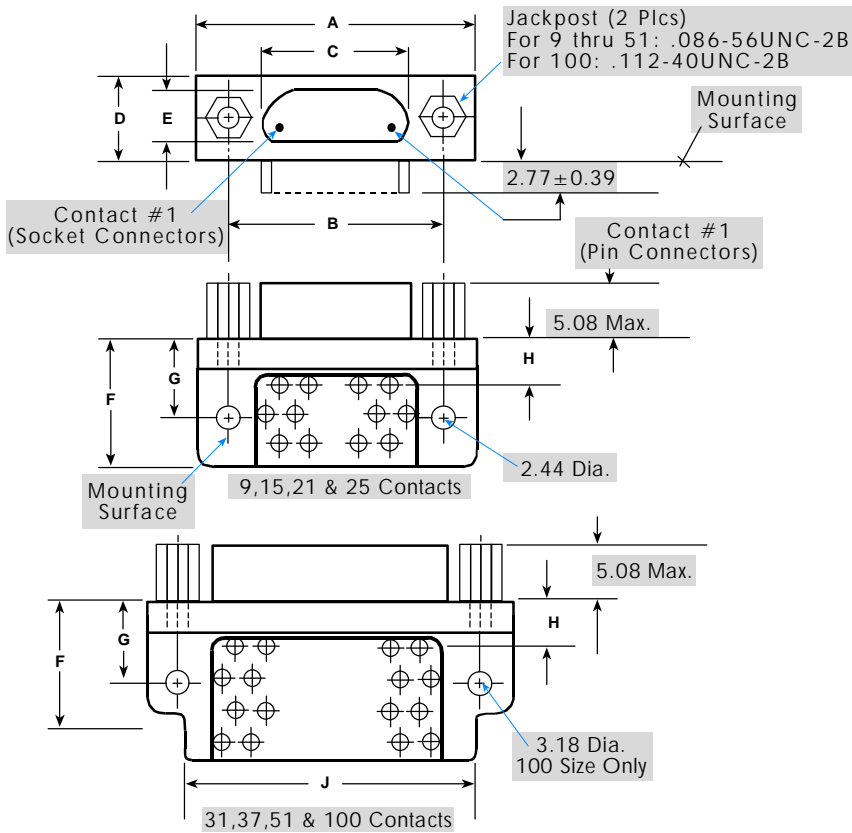


EDGEBOARD MOUNTING



All dimensions in mm.

90° - LO PROFILE RTI Termination Configuration



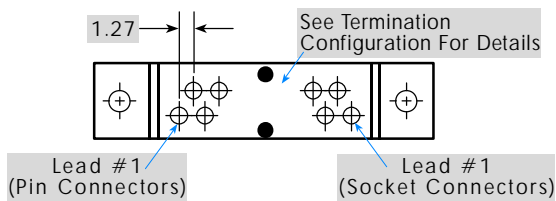
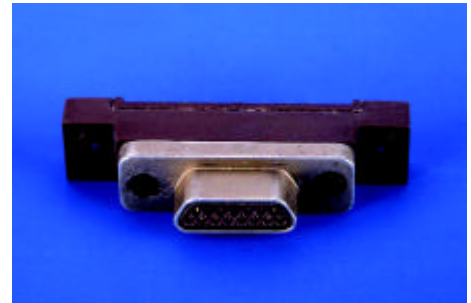
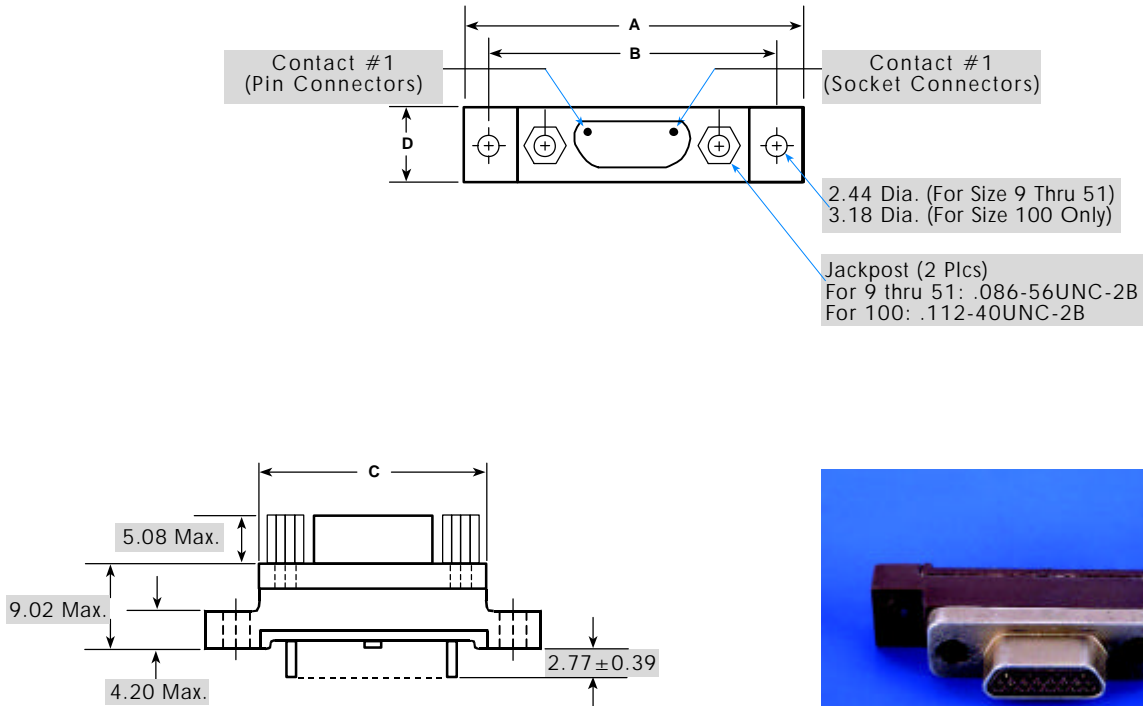
PARTNUMBER	Amax.	B+/- 0.013	Cmax.	Dmax	Emax.	Fmax.	Gmax. +/- 0.025	H+/- 0.025	Jmax.
CMK**-9P**	19,94	14,35	8,46	7,83	4,68	10,67	6,35	5,84	-
-9S	19,94	14,35	10,22	7,83	6,35	10,67	6,35	5,84	-
-15P	23,75	18,16	12,27	7,83	4,68	10,67	6,35	3,30	-
-15S	23,75	18,16	14,03	7,83	6,35	10,67	6,35	3,30	-
-21P	27,56	21,97	16,08	7,83	4,68	10,67	6,35	3,30	-
-21S	27,56	21,97	17,84	7,83	6,35	10,67	6,35	3,30	-
-25P	30,10	24,51	18,62	7,83	4,68	10,67	6,35	3,30	-
-25S	30,10	24,51	20,38	7,83	6,35	10,67	6,35	3,30	-
-31P	33,91	28,32	22,43	7,83	4,68	13,21	6,35	3,30	27,56
-31S	33,91	28,32	24,19	7,83	6,35	13,21	6,35	3,30	27,56
-37P	37,72	32,13	26,24	7,83	4,68	13,21	6,35	3,30	30,10
-37S	37,72	32,13	28,00	7,83	6,35	13,21	6,35	3,30	30,10
-51P	36,45	30,86	24,97	8,92	5,77	16,51	7,62	3,81	31,88
-51S	36,45	30,86	26,73	8,92	7,50	16,51	7,62	3,81	31,88
-100P	55,12	45,72	35,13	10,01	6,86	25,40	10,16	5,08	46,11
-100S	55,12	45,72	38,31	10,01	10,01	25,40	10,16	5,08	46,11

P=Pin, S=Socket
 1. For terminal identification see Page 7.
 2. Grid pattern for all configurations is (.100 x .100) 25.4 x 25.4
 3. Consult factory for information on transition blocks using CMD (plastic shell) connectors.

All dimensions in mm.

CMK Transition Blocks

180° - LO PROFILE STI Termination Configuration



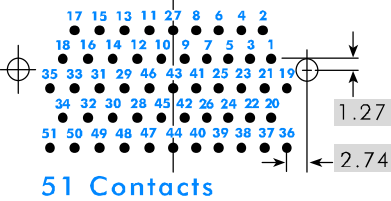
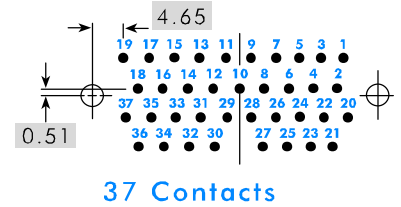
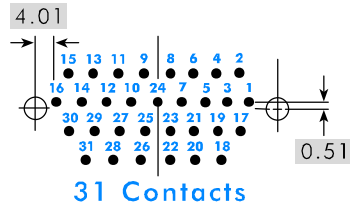
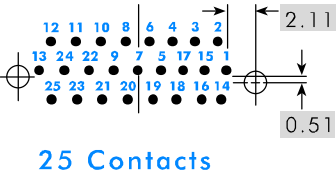
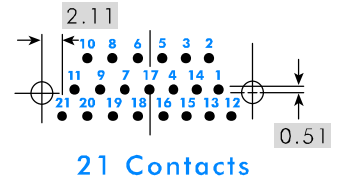
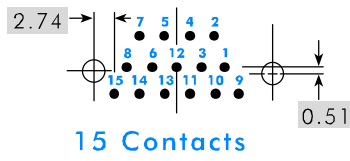
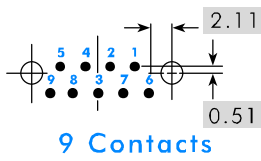
1. For terminal identification see Page 7.
2. Grid pattern for all configurations is (.100 x .100) 25.4 x 25.4
3. Consult factory for information on transition blocks using CMD (plastic shell) connectors.

PARTNUMBER	Amax.	B +/- 0.13	Cmax.	Dmax.
CMK**9P*	35,30	29,20	19,95	8
-9S	35,30	29,20	19,95	8
-15P	35,30	29,20	23,70	8
-15S	35,30	29,20	23,70	8
-21P	42,95	36,85	27,55	8
-21S	42,95	36,85	27,55	8
-25P	44,20	38,10	30,10	8
-25S	44,20	38,10	30,10	8
-31P	51,80	45,70	33,40	8
-31S	51,80	45,70	33,40	8
-37P	59,45	53,35	37,70	8
-37S	59,45	53,35	37,70	8
-51P	57,65	50,80	36,45	9
-51S	57,65	50,80	36,45	9
-100 P	77,98	71,10	55,12	10
-100 S	77,98	71,10	55,12	10

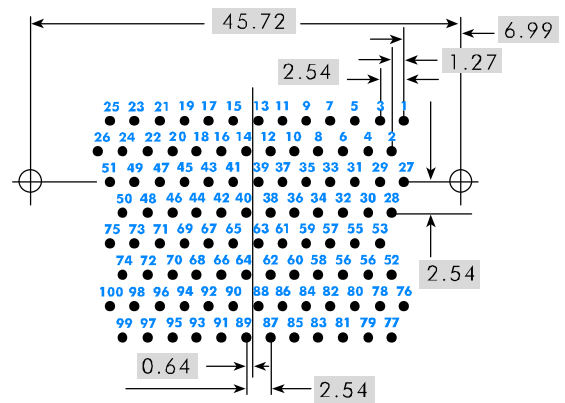
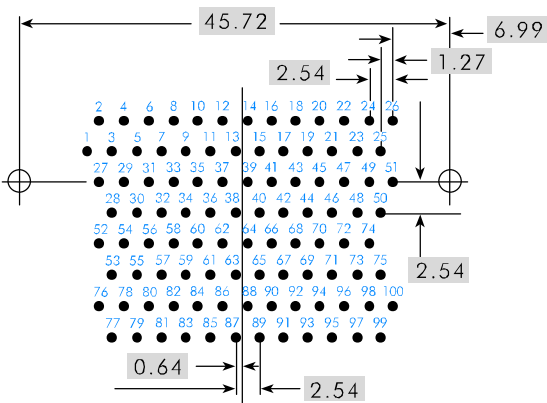
All dimensions in mm.

CMK Transition Blocks - Termination Configuration

90° - LO PROFILE RTI



View is from mounting surface.
Pin contacts shown.
Socket contacts - mirror image.
(Except 100 contacts)



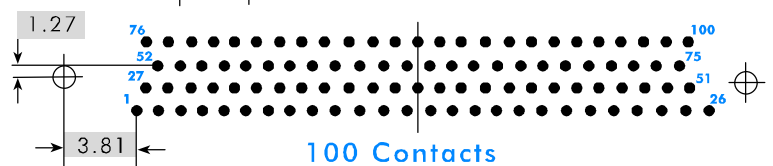
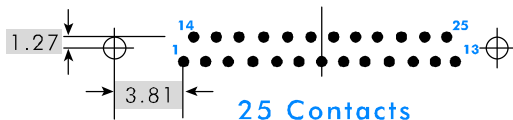
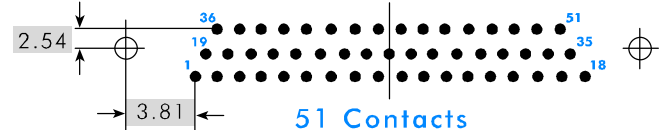
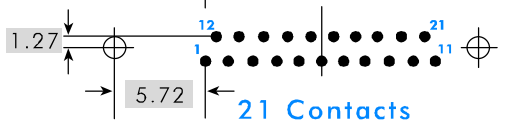
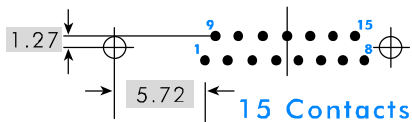
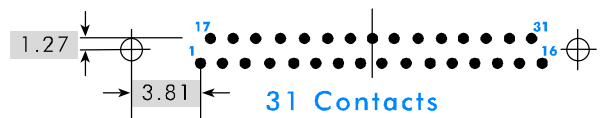
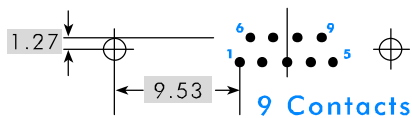
100 Contacts
(Socket Connector)



100 Contacts
(Pin Connector)



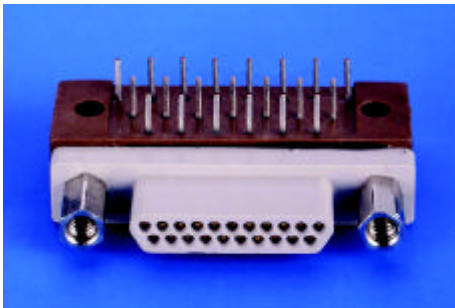
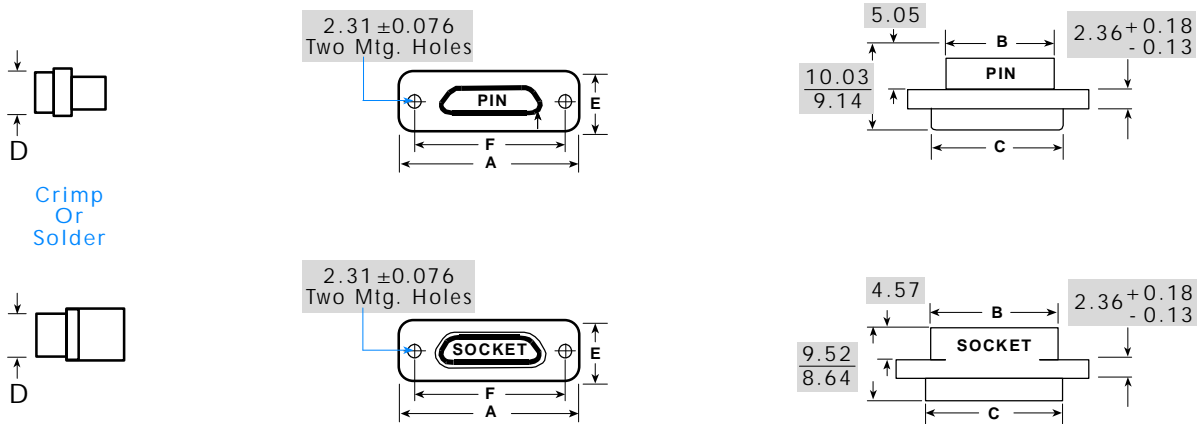
180° - LO PROFILE



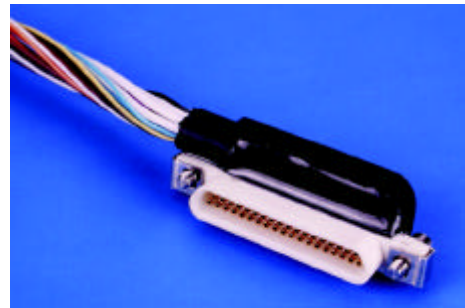
All dimensions in mm.

CMD Shell Dimensions

Screw Mount



Plug



Receptacle

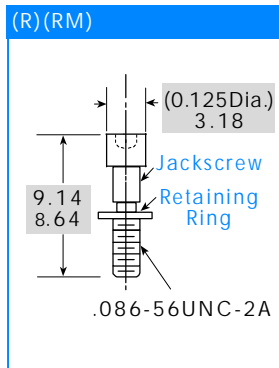
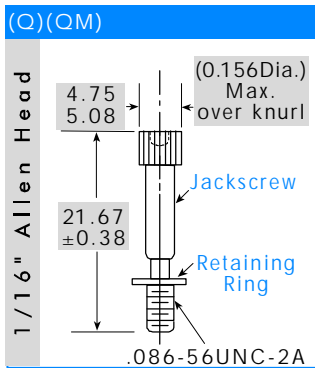
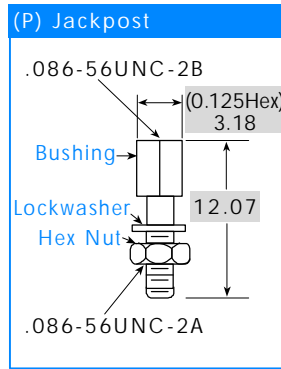
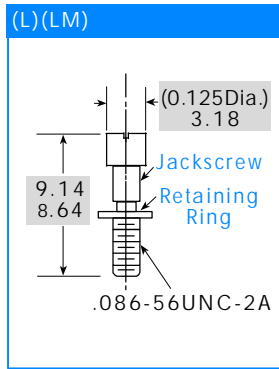
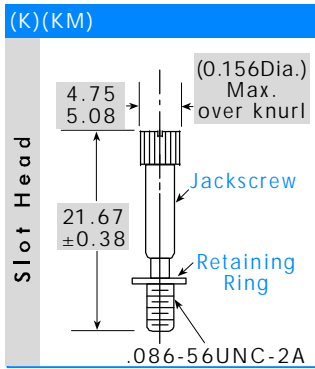
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CMD**-9P**	20,02	7,40	10,11	4,39	5,28	14,35
CMD**-9S**	20,02	9,65	10,11	4,39	5,28	14,35
CMD**-15P**	23,82	11,20	13,92	4,39	5,28	18,16
CMD**-15S**	23,82	13,45	13,92	4,39	5,28	18,16
CMD**-21P**	27,64	15,05	17,73	4,39	5,28	21,97
CMD**-21S**	27,64	17,25	17,73	4,39	5,28	21,97
CMD**-25P**	30,18	17,55	20,27	4,39	5,28	24,51
CMD**-25S**	30,18	19,80	20,27	4,39	5,28	24,51
CMD**-31P**	34,00	21,40	24,08	4,39	5,28	28,32
CMD**-31S**	34,00	23,60	24,08	4,39	5,28	28,32
CMD**-37P**	37,80	25,20	27,89	4,39	5,28	32,13
CMD**-37S**	37,80	27,40	27,89	4,39	5,28	32,13
CMD**-51P**	36,52	23,90	26,62	5,59	6,35	30,86
CMD**-51S**	36,52	26,15	26,62	5,59	6,35	30,86

Nylon - CMDF2*
 Polyester - CMDG3*
 Per MIL-PRF-83513
 Diallyl Phthalate - CMDD1*

* see "how to specify" for description

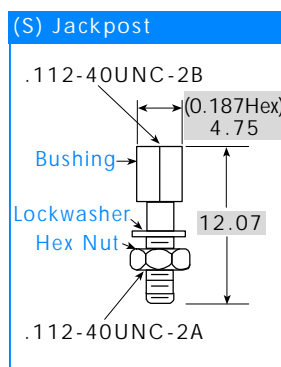
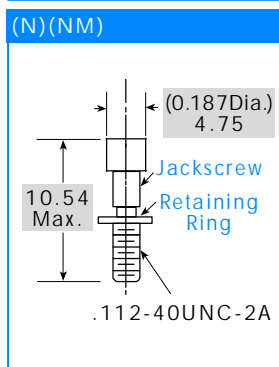
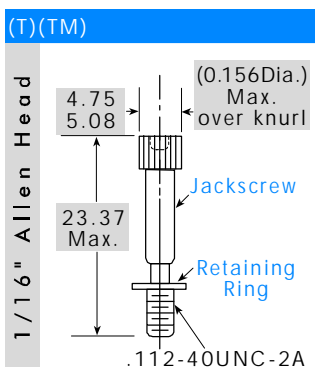
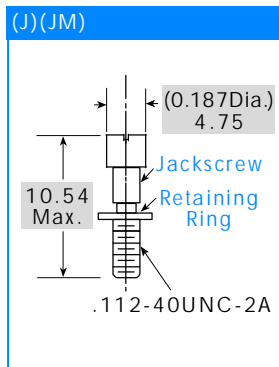
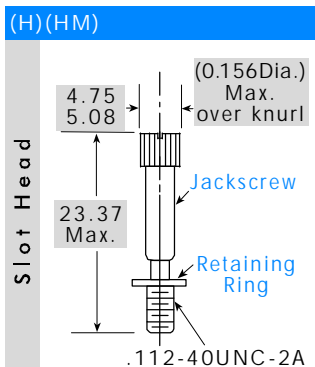
All dimensions in mm.

9-51 CONTACTS



1. Jackpost Assemblies will accommodate (3/32") 2,38 mm max. panel Thickness
2. Letters in parentheses is to assist in ordering hardware with the connector
3. Hardware meets requirements of M83513/5 except the material is 303 stainless steel, passivated
4. order separately with suffix M (MIL Type) that meets all requirements of M83513/5. Material is corrosion resistant steel, non-magnetic, 125,000 PSI tensile strength minimum (jackscrew only)
Separately ordered hardware must be ordered in pairs for each connector

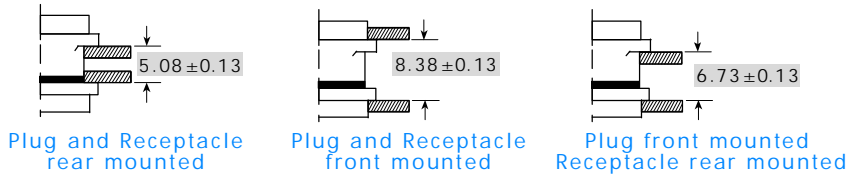
100 CONTACTS



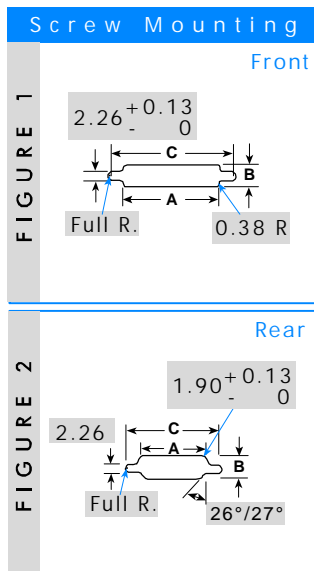
All dimensions in mm. Dimensions in parentheses are inches.

CMD Plastic Shell - Cutout Dimensions

Panel Mounting Dimensions - CMD Plastic

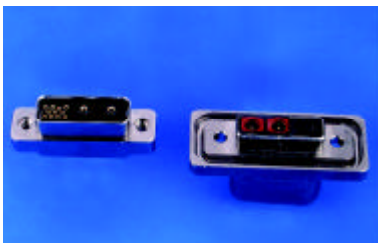


Panel Cutout Dimensions - CMD Plastic



NUMBER OF CONTACTS	Fig.	A+0.1 -0	B+0.1 -0	C+0.13 -0
9	1	10,45	4,50	14,50
	2	9,75	5,65	14,50
15	1	14,30	4,50	18,30
	2	13,55	5,65	18,30
21	1	18,10	4,50	22,10
	2	17,35	5,65	22,10
25	1	20,60	4,50	24,65
	2	19,90	5,65	24,65
31	1	24,45	4,50	28,45
	2	23,70	5,65	28,45
37	1	28,25	4,50	32,25
	2	27,55	5,65	32,25
51	1	26,95	5,70	31,00
	2	26,25	6,70	31,00

Customspezific - Specials



Mixed Layout HV-Contact integrated



Integrated electronic



Kapton insulated Flatcable



Connector Saver

All dimensions in mm.

Metal Shell

CMK	C2	B	37	P	6	A	1	18.0	
<i>Series - CMK</i>									
C2 - Cadium, Yellow Chromate N1 - Nickel, Electroless		Shell Finish	Hardware	Number of Contacts	Contact Type	Wire Size	Wire Type	Insulation Color or Finish	Lead Length in mm
								1 - All white wire	6 - Bare (unfinished)
								2 - All yellow wire	7 - Color coded per MIL-STD-681, System 1
								3 - All grey wire	
								4 - Gold plated	
								5 - Tinned	
B - No Hardware F - Float Bushing K, KM - Jackscrew, Slotted Head, High Profile (9-51) L, LM - Jackscrew, Slotted Head (9-51) H, HM - Jackscrew, Slotted Head, High Profile (100) J, JM - Jackscrew, Slotted Head, Low Profile (100) Q, QM - Jackscrew, Allen Head, High Profile (9-51) T, TM - Jackscrew, Allen Head, High Profile (100) R, RM - Jackscrew, Allen Head, Low Profile (9-51) N, NM - Jackscrew, Allen Head, Low Profile (100) P - Jackpost Assembly (9-51) S - Jackpost Assembly (100)								Per MIL-W-16878	A - Type E, 7 strand B - Type ET, 7 strand C - Type E, 19 strand D - Type ET, 19 strand F - 7 strand per MIL-W-22759/11 (#28 AWG only) G - 19 strand per MIL-W-22759/11 (#26 AWG only) L - Copper, Solid (#25 AWG only) M - Dumet, Solid
9, 15, 21, 25, 31, 37, 51, 100 See contact arrangement								4 - #24 AWG 5 - #25 AWG 6 - #26 AWG 8 - #28 AWG 0 - #30 AWG	
P - Pin (Plug) Normal S - Socket (Receptacle)									S - Solder pots #26 AWG max.
									RTI - Right Angle Termination
									STI - Straight Termination

Plastic Shell

CMD	C2	B	37	P	6	A	1	18.0	
<i>Series - CMD</i>									
D1 - Diallyl Pthalate F2 - glass filled nylon G3 - Polyester natural		Insulator	Hardware	Number of Contacts	Contact Type	Wire Size	Wire Type	Insulation Color or Finish	Lead Length in mm
								1 - All white wire	6 - Bare (unfinished)
								2 - All yellow wire	7 - Color coded per MIL-STD-681, System 1
								4 - Gold plated	
								5 - Tinned	
B - No Hardware F - Float Bushing K, KM - Jackscrew, Slotted Head, High Profile L, LM - Jackscrew, Slotted Head, Low Profile Q, QM - Jackscrew, Allen Head, High Profile R, RM - Jackscrew, Allen Head, Low Profile P - Jackpost Assembly								Per MIL-W-16878	A - Type E, 7 strand B - Type ET, 7 strand C - Type E, 19 strand D - Type ET, 19 strand F - 7 strand per MIL-W-22759/11 (#28 AWG only) G - 19 strand per MIL-W-22759/11 (#26 AWG only) L - Copper, Solid (#25 AWG only) M - Dumet, Solid
9, 15, 21, 25, 31, 37, 51 See contact arrangement								4 - #24 AWG 5 - #25 AWG 6 - #26 AWG 8 - #28 AWG 0 - #30 AWG	
P - Pin (Plug) Normal S - Socket (Receptacle)									S - Solder pots #26 AWG max.
									RTI - Right Angle Termination
									STI - Straight Termination

comtronic

C O N N E C T O R S

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