

# Card Edge Mount to Cable

.050"

9 thru 100 Contacts

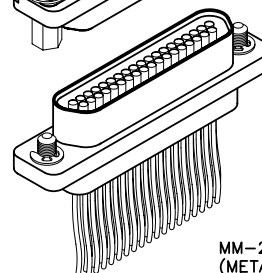
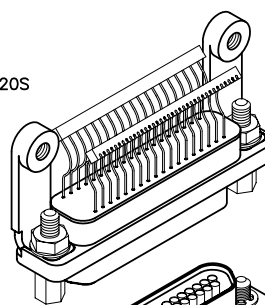
## Rugged Card Edge Mount

**MK**

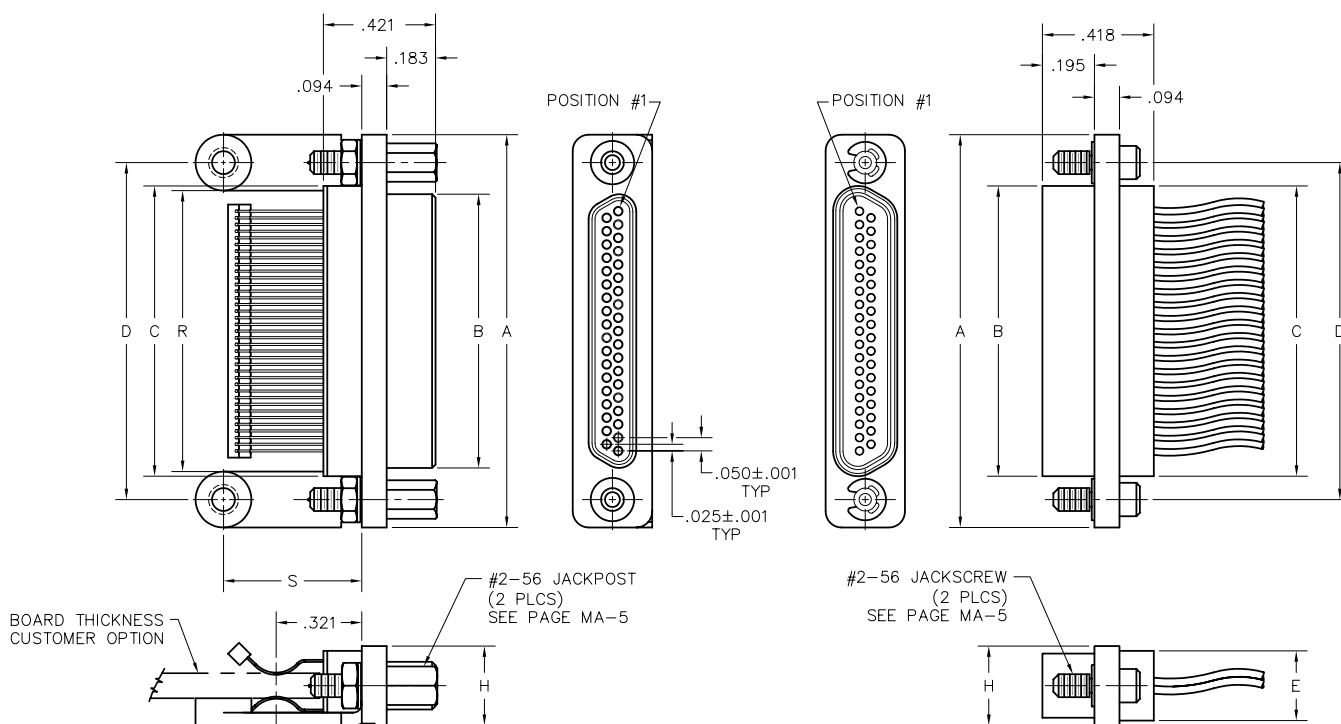
Rugged Metal

**MM**

MK-2F2-037-175-320S  
(METAL)



MM-222-037-261-41WQ  
(METAL)



PLUG

RECEPTACLE

SIZE	CONTACT ROWS	DIMENSIONS										
		A	B		C	D	E	H	HARDWARE	MOUNTING HOLES	R	S
		PLUG MAX	RCPT MAX			POTTING WELL MAX						
9	2	.775	.334	.400	.390	.565	.270	.298	#2-56 UNC THD (.092 DIA THRU)	#4-40 UNC THD	.355	.519
15		.925	.484	.550	.540	.715					.505	
21		1.075	.634	.700	.690	.865					.655	
25		1.175	.734	.800	.790	.965					.755	
31		1.325	.884	.950	.940	1.115					.905	
37		1.475	1.034	1.100	1.090	1.265					1.055	
51	3	1.425	.984	1.050	1.040	1.215	.310	.341	#4-40 UNC THD (.147 DIA THRU)	#4-40 UNC THD	1.005	
69		1.725	1.284	1.350	1.340	1.515					1.309	
100		4	2.160	1.384	1.508	1.432					1.800	.360

— CLICK HERE —

**REQUEST QUOTE**

www.geminelec.com

PAGE 1 OF 7 PAGES

(800) 882-6414 | sales@geminelec.com

**PLUG:** MK-2F2-031-175-320S  
**RECEPTACLE:** MM-222-031-261-41WQ-900  
XX-XXX-XXX-XXX-XXXX-XXX

PLUG		RECEPTACLE	
<b>SERIES</b>			
MK .050" Rugged Metal Card Edge Mount Connector (MK mates with MK, ML, MM, MN receptacles)		MM .050" Rugged Metal I/O Connector (MM mates with MK, ML, MM, MN plugs)	
<b>BODY</b>			
2	2-Row (Sizes 9 thru 37)	2	2-Row (Sizes 9 thru 37)
3	3-Row (Size 51 & 69)	3	3-Row (Size 51 & 69)
4	4-Row (Size 100)	4	4-Row (Size 100)
<b>BODY STYLE:</b> F Plug, straight, card edge, with mounting brackets		<b>BODY STYLE:</b> 2 Receptacle, straight, with ears	
<b>BODY MATERIAL:</b> 2 Polyphenylene Sulfide with electroless nickel shell		<b>BODY MATERIAL:</b> 2 Polyphenylene Sulfide with electroless nickel shell	
3 Polyphenylene Sulfide with electrodeposited cadmium shell <input checked="" type="checkbox"/>		3 Polyphenylene Sulfide with electrodeposited cadmium shell <input checked="" type="checkbox"/>	
4 Polyphenylene Sulfide with hard anodized black shell		4 Polyphenylene Sulfide with hard anodized black shell	
<b>SIZE</b>			
XXX 009, 015, 021, 025, 031, 037, 051, 069, 100		XXX 009, 015, 021, 025, 031, 037, 051, 069, 100	
<b>CONTACTS</b>			
<b>TYPE CONTACTS/TERMINATIONS:</b> 17 Pin, surface mount, .062-.094 pcb thickness (.010 dia)		<b>TYPE CONTACTS/TERMINATIONS:</b> 21 Socket, straight, solder cup	
18 Pin, surface mount, .109-.140 pcb thickness (.010 dia)		24 Socket, straight, .500" pigtails (.018 dia)	
		25 Socket, straight, 1.000" pigtails (.018 dia)	
		26 Socket, straight, crimped wire	
<b>PLATING OPTIONS:</b> 5 50 μ" Au contacts; Sn/Pb alloy terminations <input checked="" type="checkbox"/>		<b>PLATING OPTIONS:</b> 1 50 μ" Au contacts (crimp wire)	
8 50 μ" Au contacts; Sn plated terminations		3 50 μ" Au contacts: 10 μ" Au terminations (solder cup, pigtail)	
		5 50 μ" Au contacts; Sn/Pb alloy terminations (pigtail) <input checked="" type="checkbox"/>	
		7 50 μ" Au contacts; SAC305 terminations (pigtail)	
<b>HARDWARE</b>			
<b>STYLE OF HARDWARE:</b> 32 Two fixed jacknut assemblies (72*)		<b>STYLE OF HARDWARE:</b> 00 None	
46 Two turning jackscrews, allen head, captivated** (86*)		22 Two fixed jacknut assemblies (62*)	
		41 Two turning jackscrews, allen head, retaining ring (81*)	
		42 Two long turning jackscrews, allen head, retaining ring (82*)	
		43 Two turning jackscrews, slot head, retaining ring (83*)	
		44 Two long turning jackscrews, slot head, retaining ring (84*)	
		45 Two turning jackscrews, allen head, captivated** (85*)	
<b>POLARIZATION / WIRING:</b> 0S Standard Body Polarization		<b>POLARIZATION / WIRING</b> 00 None	
		XX For wiring codes, see page MA-3 & MA-4	
<b>OPTIONS</b>			
		900 Interfacial sealing gasket	

\* = Use number in parenthesis when ordering size 100.

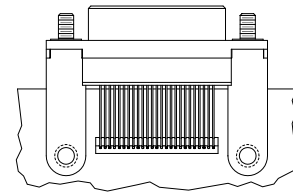
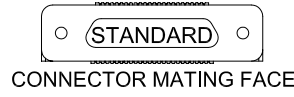
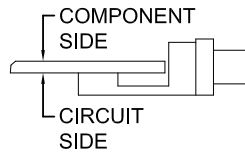
\*\* = Captive hardware is factory installed and non-removable.

= Option not RoHS compliant

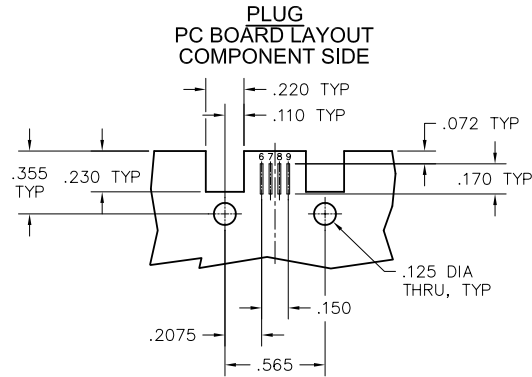
— CLICK HERE —

# Recommended PC Board Layout

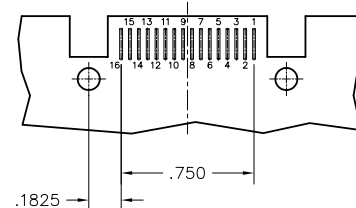
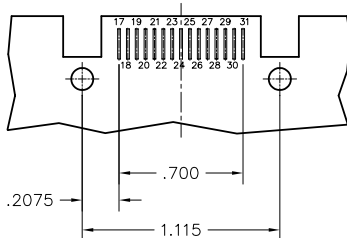
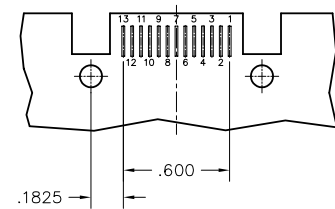
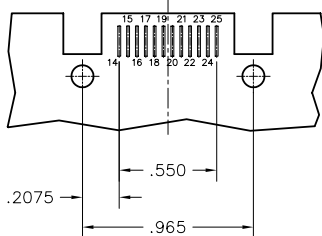
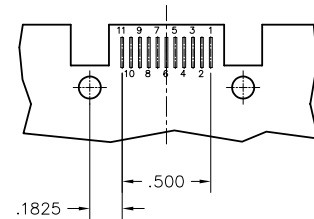
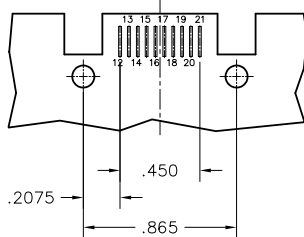
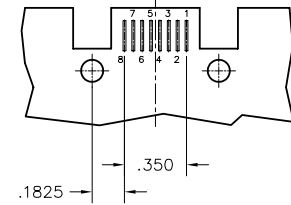
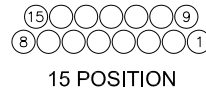
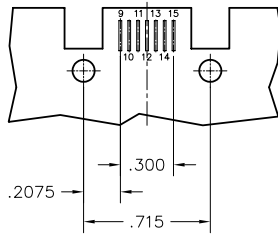
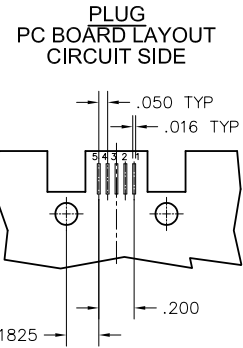
Card Edge Mount  
Standard Polarization



PC BOARD LAYOUT  
CIRCUIT SIDE



CONNECTOR MATING FACE



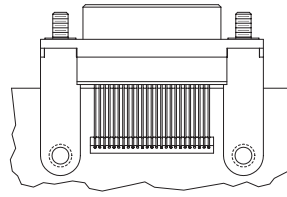
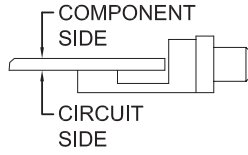
— CLICK HERE —

**REQUEST QUOTE**

www.geminelec.com

PAGE 3 OF 7 PAGES

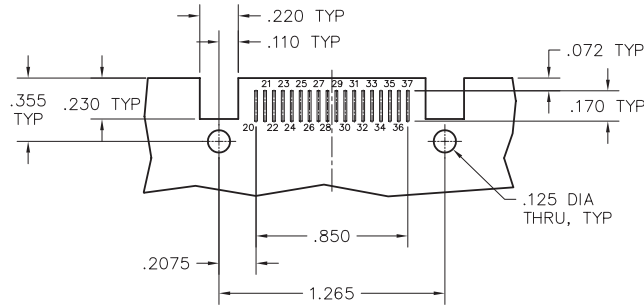
(800) 882-6414 | sales@geminelec.com



## Recommended PC Board Layout

Card Edge Mount  
Standard Polarization

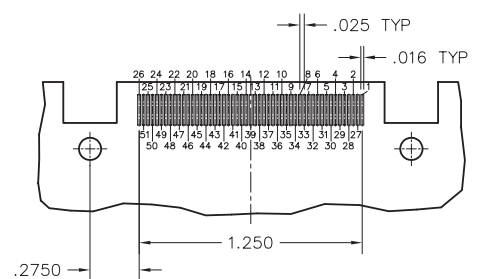
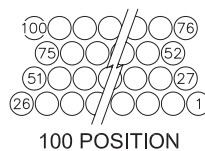
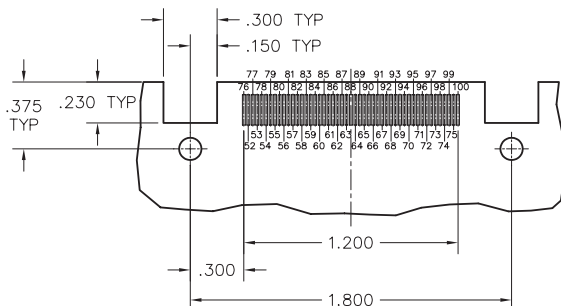
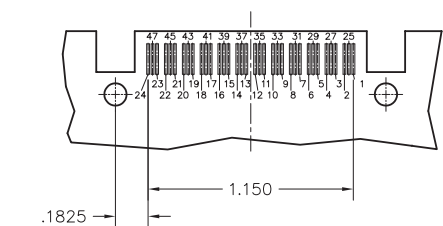
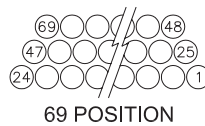
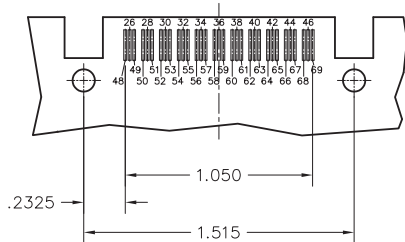
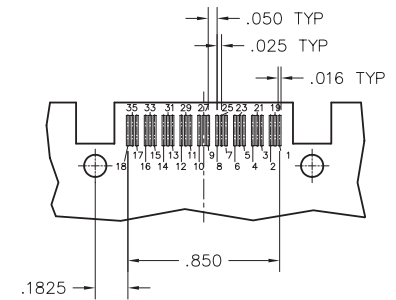
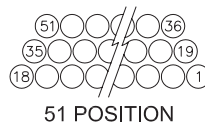
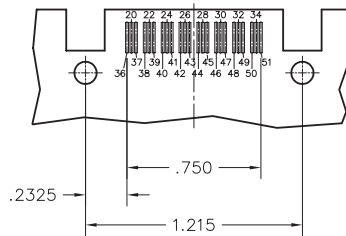
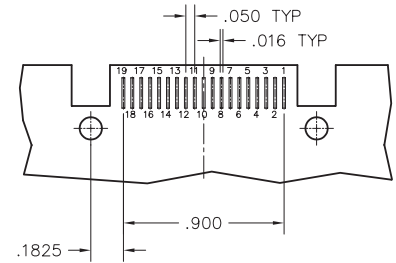
**PLUG**  
PC BOARD LAYOUT  
COMPONENT SIDE



CONNECTOR  
MATING FACE



**PLUG**  
PC BOARD LAYOUT  
CIRCUIT SIDE



— CLICK HERE —

**REQUEST QUOTE**

www.geminelec.com

PAGE 4 OF 7 PAGES

(800) 882-6414 | sales@geminelec.com

# Mating Matrix for AirBorn "M" Series Connectors

## RECEPTACLES

P L U G S	MA (Strip)	MC (Circular)	MM (Hybrid)	MK (Metal) PC Board	ML (Plastic) PC Board	MM (Metal) I/O	MN (Plastic) I/O	MP (Plastic) I/O	MQ (Metal) I/O	MR (Plastic) PC Board	MS (Metal) PC Board	
	MA (Strip)	XX										
	MC (Circular)		XX									
	MM (Hybrid)			XX								
	MK (Metal) PC Board				BB	BB	BI	BI				
	ML (Plastic) PC Board				BB	BB	BI	BI				
	MM (Metal) I/O				IB	IB	II	II				
	MN (Plastic) I/O				IB	IB	II	II				
	MP (Plastic) I/O								II	II	IB	IB
	MQ (Metal) I/O								II	II	IB	IB
	MR (Plastic) PC Board								BI	BI	BB	BB
	MS (Metal) PC Board								BI	BI	BB	BB

I/O Connectors

MM-MN-MP-MQ

PC Board Mounted Connectors

MK-ML-MR-MS

Inter-mateable Connectors

MK-ML-MM-MN  
MP-MQ-MR-MS

**KEY:**

BB = PC Board Mounted Plug with PC Board Mounted Receptacle

BI = PC Board Mounted Plug with I/O Receptacle

IB = I/O Plug with PC Board Mounted Receptacle

II = I/O Plug with I/O Receptacle

For Military Configurations, See pages MIL-1 thru MIL-22

— CLICK HERE —

**REQUEST QUOTE**

PAGE 5 OF 7 PAGES

## Specifications

### Materials and Finishes \*

<b>Contacts:</b>	Pins: BeCu alloy strip per ASTM B194 Sockets: Brass per ASTM B121 / B121M or ASTM B16 / B16M or ASTM B453
<b>Contact Finish:**</b>	Gold plate per ASTM B488
<b>Shells:</b>	Aluminum Alloy 6061-T6 per SAE AMS-QQ-A-250/11 or 6061-T6511 per SAE AMS-QQ-A-200/8 or Stainless Steel 300 series per ASTM A484 / A484M and ASTM A582 / A582M Passivated per SAE AMS2700
<b>Aluminum Shell Finishes:**</b>	Electroless Nickel per SAE AMS2404 Electrodeposited Cadmium per SAE AMS-QQ-P-416 Black Anodized per MIL-A-8625 Gold per MIL-DTL-45204
<b>Molded Insulators:</b>	Glass filled polyphenylene sulfide per MIL-M-24519
<b>Embedment:</b>	Insulating compound per MIL-I-16923
<b>Jackscrews, Jackposts and Nuts:</b>	Corrosion resistant steel per ASTM A320 or ASTM A484 / A484M and ASTM A582 / A582M Passivated per SAE AMS2700
<b>Clips and Washers:</b>	Corrosion resistant steel per ASME 18.24 or NASM35333 Passivated per ASME 18.24 or NASM35333
<b>Guide Pins</b>	Corrosion resistant steel per ASTM A484 / A484M and ASTM A582 / A582M Passivated per SAE AMS2700
<b>Latches</b>	Beryllium copper in accordance with ASTM B194 Electroless Nickel plate per SAE AMS2404
<b>Interfacial Seal Gaskets:</b>	Fluorosilicone per SAE AMS-R-25988
<b>Tolerances:**</b>	Unless otherwise specified: Fractions = $\pm 1/64$ " Decimals = $\pm .010$ " Angles = $\pm 5^\circ$ Wire lengths: insulated/stranded = $+1.0"/-0.0$ " uninsulated/solid = $+0.2"/-0.0$ "

Note: AirBorn can manufacture special configurations for your exact specifications.

\* = Reference the above listed specifications or an equivalent industry standard when applicable

\*\* = When ordering to Mil Spec P/N, Mil Spec requirements apply

## Performance

### Reference MIL-DTL-83513

AirBorn "M" Series meets or exceeds MIL-DTL-83513 Performance Specifications

<b>Contact Rating:</b>	3-amperes maximum
<b>Solderability:</b>	Terminals (except crimp) tested in accordance with MIL-STD-202, Method 208
<b>Wire Size:</b>	Stranded #26 AWG or solid #25 AWG standard (consult factory for other sizes and types)
<b>Test Voltage:</b>	600 V, RMS, 60 Hz
<b>Operating Temperature:</b>	-55° C to +125° C
<b>Insulation Resistance:</b>	5,000 megohms minimum @ 500 VDC
<b>Durability:</b>	500 connector mating cycles
<b>Vibration:</b>	Tested in accordance with MIL-STD-1344, Method 2005, Condition IV, according to MIL-83513
<b>Shock:</b>	Tested in accordance with MIL-STD-1344, Method 2004, Condition E, according to MIL-83513
<b>Salt Spray:</b>	Mated connectors tested in accordance with MIL-STD-1344, Method 1001, Test Condition B
<b>Humidity:</b>	Mated connectors tested in accordance with MIL-STD-1344, Method 1002, Type II (except steps 7a and 7b)
<b>Thermal Shock:</b>	Tested to the temperature extremes of MIL-STD-1344, Method 1003, Test Condition A (except step 3, temperature shall be 125° C)
<b>Contact Resistance:</b>	0.065 volt maximum drop @ 2.5 amps (.026 ohms)
<b>Contact Engaging Force:</b>	6.0 ounce maximum, with .0221 diameter test sleeve per contact
<b>Contact Separating Force:</b>	0.5 ounce minimum, with .0230 diameter test sleeve per contact
<b>Crimp Strength:</b>	5 pound minimum tensile strength
<b>Mating &amp; Unmating Force:</b>	10 ounces maximum per contact

— CLICK HERE —

**REQUEST QUOTE**

www.geminelec.com

PAGE 7 OF 7 PAGES

(800) 882-6414 | sales@geminelec.com