Product Data Sheet

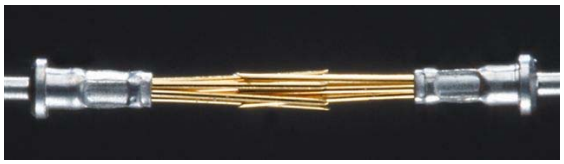
Amphenol® Docking Connectors

No. 204.PA2

Utilizing Amphenol's Brush contact system, this connectors series offers over 100,000 mating cycles, a necessity in applications which require frequent docking to charge and transfer data.

Brush Technology

Strands of high tensile strength wire are bundled together to form brush-like contacts. By intermeshing two wire bundles together, an electrical connection is made.



Brush Attributes:

- Low Mating Force (70-90% less than conventional pin and socket).
- Provides multiple points of contact, 14-70 points of contact per mate.
- Impervious to fretting corrosion.
- Long contact life, over 100,000 mating cycles without degradation in performance.

Amphenol's Design Engineering and Manufacturing Expertise

We take pride that Amphenol Aerospace is the undisputed leader in interconnect systems for aerospace/harsh environment applications. Such applications require a high degree of engineering sophistication and precision manufacturing capabilities that only a company that has been in the interconnect product design and manufacturing business for over 50 years can offer.

Expert design and applications engineering provides solid modeling and full Pro-E capabilities to develop new interconnect product and perform structural analysis. In addition, our team of dedicated signal integrity engineers characterize our interconnect products and optimize for high speed.

Performance

Durability:	Up to 100,000 mating cycles
Insertion/Extraction Force:	1.5 ounce typical per contact
Operating Temperature:	-65° to 125°C
Current Rating:	Up to 5 amperes (termination dependent) Hot swap 1 ampere maximum (load dependent)
Data Rate:	Configurable for 3.125 Gbps differential signal (Select connectors only)
Insulation Resistance:	5 gigaohms minimum
Dielectric Withstanding Voltage:	750 volts @ Sea Level Minimum 250 volts @ 70,000 Feet Elevation Minimum
Solderability:	MIL-STD-202, Method 208
Salt Fog:	48 Hours IAW MIL-STD-1344, method 1001, test condition B
Humidity:	IAW MIL-STD-1344, method 1002, type II
Vibration:	4 hours in each of 3 mutually perpendicular axes IAW MIL-STD-1344, method 2005, test condition V, letter H
Shock:	1 shock along each of three mutually perpendicular axes IAW MIL-STD-1344, method 2004, test condition G

Features

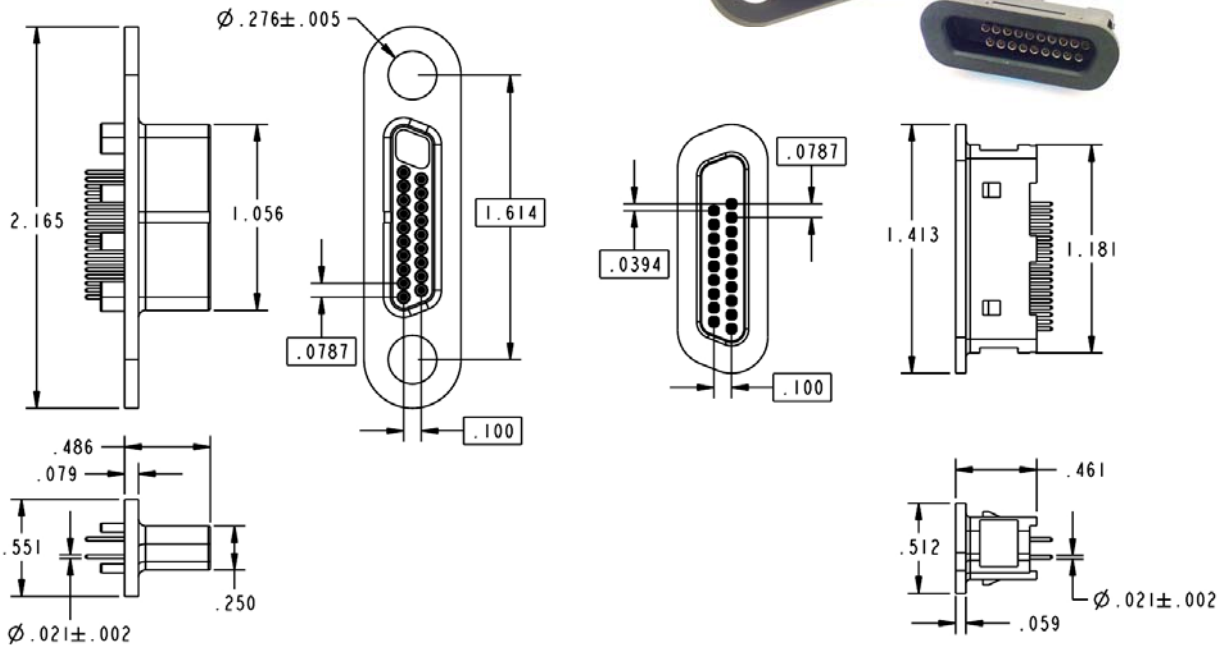
Radial Misalignment:	Capable of correcting up to a .040” initial radial misalignment
Angular Misalignment:	Capable of mating with up to a 4° initial angular misalignment
Polarization:	“D” shaped interface
Color:	Standard – Black Wide variety of colors available

Materials

Insulator:		Glass filled thermoplastic molding
Contact:	Wire:	Beryllium copper per ASTM B197; finish is gold per ASTM B488 over nickel per AMS-QQ-N-290.
	Holder:	Brass similar to UNS C33500; finish is gold per MIL-G-45204 or tin-lead per MIL-P-81728 or tin per MIL-T-10727 (RoHS Compliant).
	Sleeve:	Stainless Steel per AMS-5514, passivated IAW QQ-P-35 (DB and I/O connectors only)

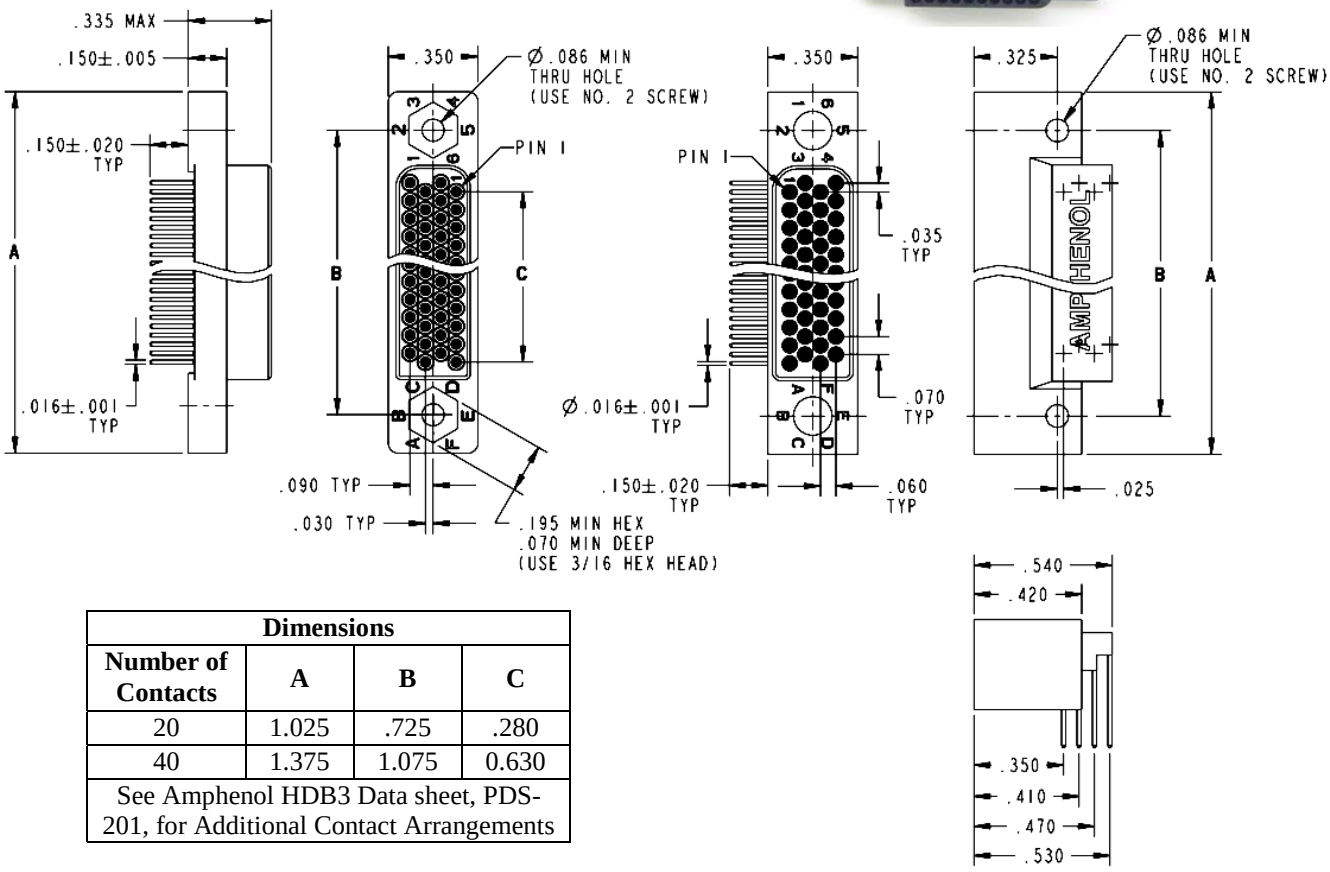
Custom Connectors

.0787 X .100 Staggered Grid Spacing



High Density Brush (HDB^3) Connector Series

.070 X .060 Staggered Grid Spacing

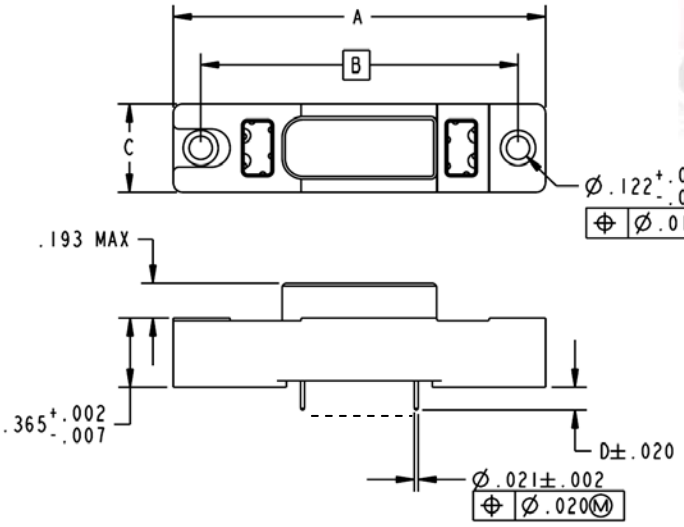


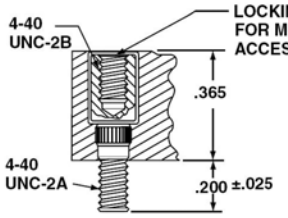
Dimensions			
Number of Contacts	**A**	**B**	**C**
20	1.025	.725	.280
40	1.375	1.075	0.630
See Amphenol HDB3 Data sheet, PDS-201, for Additional Contact Arrangements			

Low Mating Force Rectangular Connector Series

.100 X .100 Square Grid Arrangement
(Reference MIL-55302/166 thru /170)

Mother Board Connector

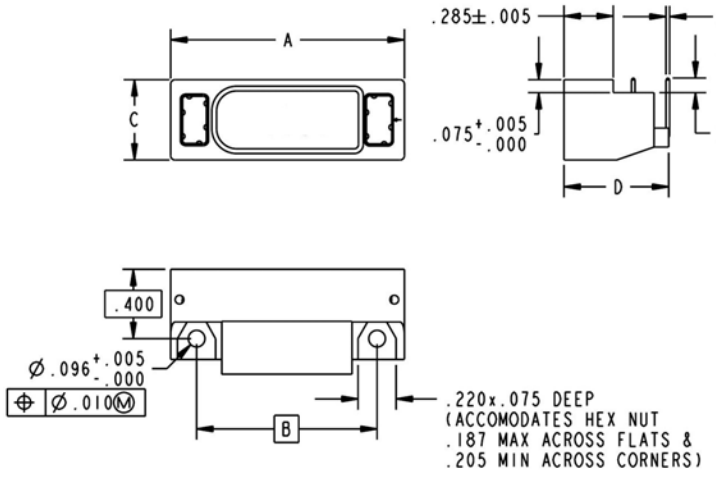




Tail Length D
.148
.180
.335

Number of Contacts	Contact Pattern	A Max	B	C Max
10	2 X 5	1.795	1.475	.390
12	2 X 6	1.895	1.575	.390
14	2 X 7	1.995	1.675	.390
15	3 X 5	1.795	1.475	.490
16	2 X 8	2.095	1.775	.390
18	2 X 9	2.195	1.875	.390
	3 X 6	1.895	1.575	.490
20	4 X 5	1.795	1.475	.590
21	3 X 7	1.995	1.675	.490
24	3 X 8	2.095	1.775	.490
	4 X 6	1.895	1.575	.590
27	3 X 9	2.195	1.875	.490
28	4 X 7	1.995	1.675	.590
32	4 X 8	2.095	1.775	.590
36	4 X 9	2.195	1.875	.590
See Amphenol Low Mating Force Rectangular Catalog, 12-035, for additional contact arrangements				

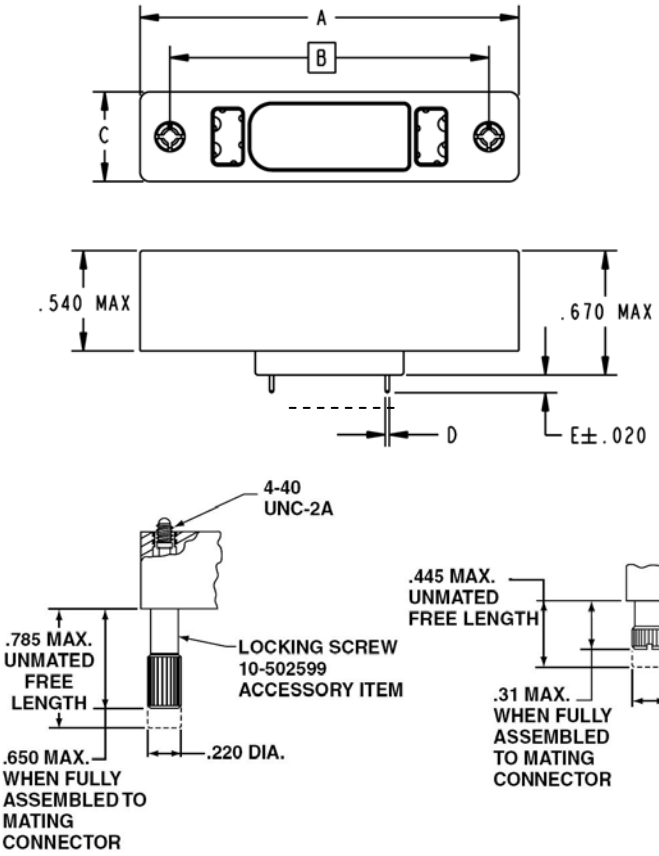
Daughter Board Connector



Tail Length E
.085
.120
.300

Number of Contacts	Contact Pattern	A Max	B	C Max	D Max
10	2 X 5	1.180	.850	.375	.545
12	2 X 6	1.280	.950	.375	.545
14	2 X 7	1.380	1.050	.375	.545
15	3 X 5	1.180	.850	.475	.645
16	2 X 8	1.480	1.150	.375	.545
18	2 X 9	1.580	1.250	.375	.545
	3 X 6	1.280	.950	.475	.645
20	4 X 5	1.180	.850	.575	.745
21	3 X 7	1.380	1.050	.475	.645
24	3 X 8	1.480	1.150	.475	.645
	4 X 6	1.280	.950	.575	.745
27	3 X 9	1.580	1.250	.475	.645
28	4 X 7	1.380	1.050	.575	.745
32	4 X 8	1.480	1.150	.575	.745
36	4 X 9	1.580	1.250	.575	.745
See Amphenol Low Mating Force Rectangular Catalog, 12-035, for additional contact arrangements					

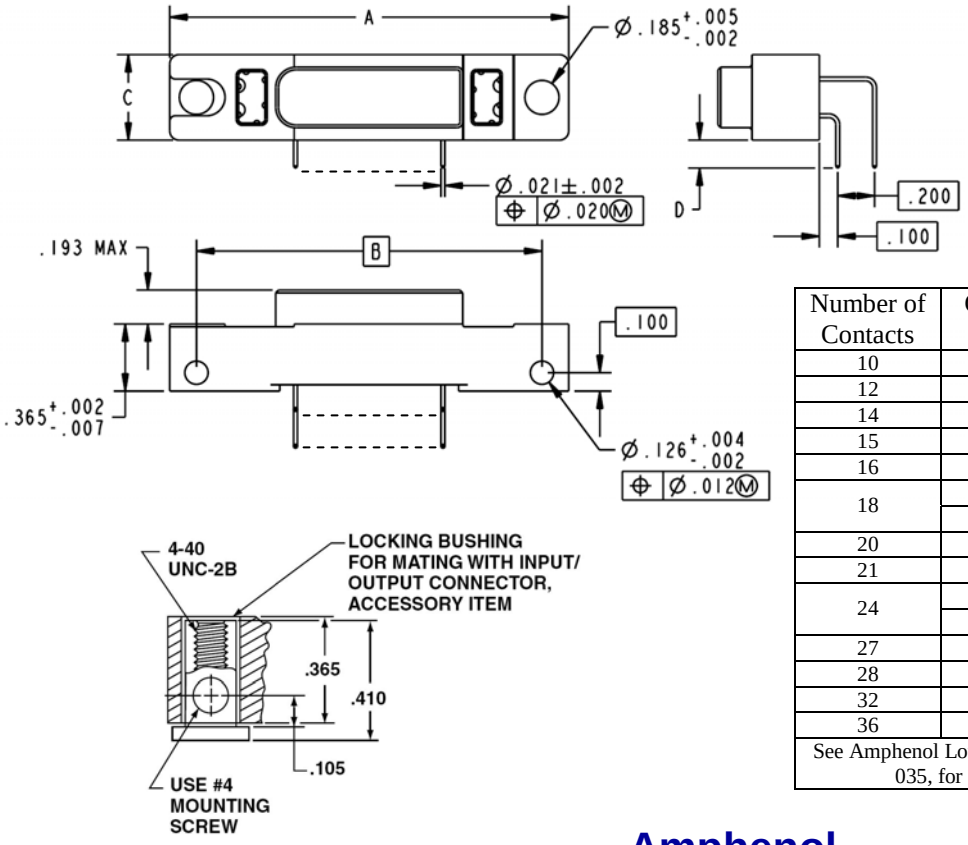
Input/Output Connector



Number of Contacts	Contact Pattern	A Max.	B	C Max.
10	2 X 5	1.795	1.475	.390
12	2 X 6	1.895	1.575	.390
14	2 X 7	1.995	1.675	.390
15	3 X 5	1.795	1.475	.490
16	2 X 8	2.095	1.775	.390
18	2 X 9	2.195	1.875	.390
	3 X 6	1.895	1.575	.490
20	4 X 5	1.795	1.475	.590
21	3 X 7	1.995	1.675	.490
24	3 X 8	2.095	1.775	.490
	4 X 6	1.895	1.575	.590
27	3 X 9	2.195	1.875	.490
28	4 X 7	1.995	1.675	.590
32	4 X 8	2.095	1.775	.590
36	4 X 9	2.195	1.875	.590
See Amphenol Low Mating Force Rectangular Catalog, 12-035, for additional contact arrangements				

Contact Type	Diameter D	Length E
Crimp	N/A	N/A
PCB	.021±.002	.060
PCB	.021±.002	.145
PCB	.021±.002	.335

Printed Circuit Connector



Tail Length D
.095
.150

Number of Contacts	Contact Pattern	A Max.	B	C Max.
10	2 X 5	1.795	1.475	.390
12	2 X 6	1.895	1.575	.390
14	2 X 7	1.995	1.675	.390
15	3 X 5	1.795	1.475	.490
16	2 X 8	2.095	1.775	.390
18	2 X 9	2.195	1.875	.390
	3 X 6	1.895	1.575	.490
20	4 X 5	1.795	1.475	.590
21	3 X 7	1.995	1.675	.490
24	3 X 8	2.095	1.775	.490
	4 X 6	1.895	1.575	.590
27	3 X 9	2.195	1.875	.490
28	4 X 7	1.995	1.675	.590
32	4 X 8	2.095	1.775	.590
36	4 X 9	2.195	1.875	.590
See Amphenol Low Mating Force Rectangular Catalog, 12-035, for additional contact arrangements				