

# AirBorn

High-Reliability Interconnect Solutions



## verSI Series

High-Speed, Micro-Density Interconnects



# Complete Electronic Solutions

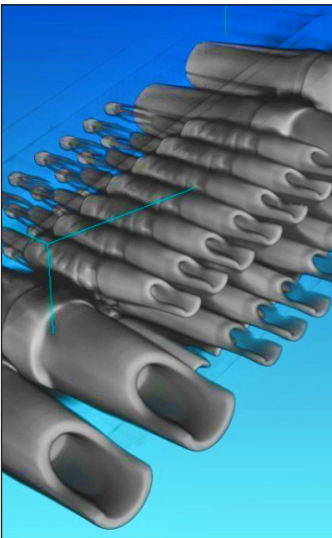


AirBorn is an employee owned company whose core business is engineering & manufacturing specialized connectors & electronic components for OEMs worldwide. We serve customers across many industries including: Commercial Air, Industrial, Medical, Military/Defense, & Space Exploration.

Companies today are looking for more than a supplier, they're looking for a strategic partner to collaborate & grow with. AirBorn products are trusted to perform in extreme conditions, where mission-critical reliability is vital to success. Customers trust AirBorn products, and have for over 60 years.

## AirBorn Engineering = Problem Solved®

AirBorn's engineering group specializes in new product design and development for OEMs across the globe. Our team of 50+ degreed engineers are the most innovative and committed to solving our customer's challenges, but that's only the beginning of where we can help! Leverage our design and manufacturing expertise throughout the entire product development process. From conceptual design, prototyping, pilot-runs through to mass production, our teams work efficiently to cut down your program's time to market.



### Solution Engineering

AirBorn has a dedicated team of experienced and degreed solution engineers on staff to help solve your most pressing electronic challenges.



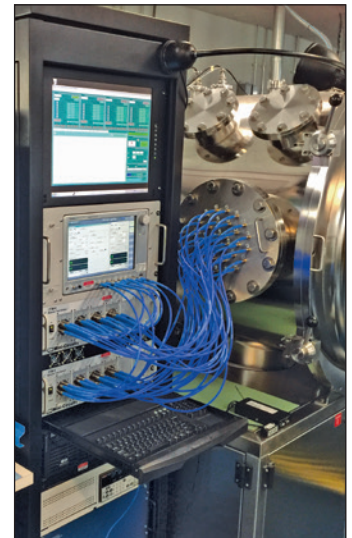
### Cable vs. Flex Assemblies

We manufacture cable and flex assemblies and can impartially recommend whichever solution is best for your distinct design or application.



### Signal Integrity Expertise

Whether a new design retrofit, or a field issue, let us help you design an end-to-end interconnect solution to support your high-speed signal integrity design.



### Lab & Test Services

We'll test against the highest standards imaginable to ensure your products stand up to the rigors of space, military, commercial air, and industrial applications.

## Connectors



Micro D  
M Series



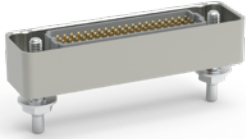
High-Speed Micro D  
microSI



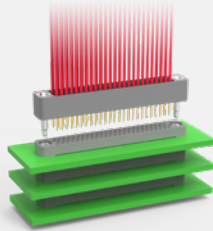
Nano D  
N Series



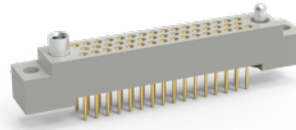
High-Speed Modular  
Slenergy



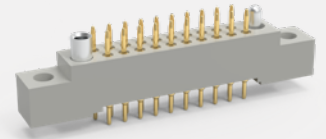
Rectangular 25Gbps  
verSI



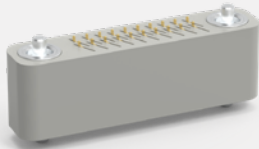
Stackable  
RC Series



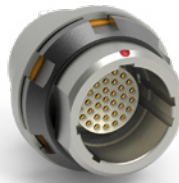
Rectangular  
R Series



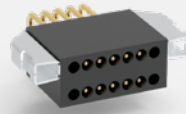
Rectangular  
W Series



Z Axis Interposer  
Z Series



Circular  
Series 360

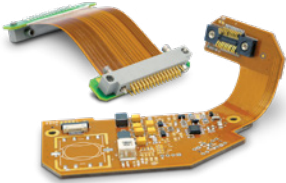


Strip Connector  
AirStrip



Macro D  
RockEt

## Assemblies



Flexible Circuit Assemblies



Cable Assemblies



FUZE Assemblies

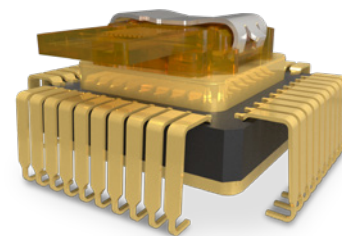


Active Optical Assemblies

## Embedded Systems



Rugged Power Systems



Photonics/Optoelectronics



# AirBorn In Action



Voyager Program

## AirBorn Solutions Are "In-Action" Inside Many Important & Famous Applications

AirBorn Connectors, Inc. was founded in 1958 to manufacture electronic connectors for aviation applications, hence our company name. By 1960, our 12 employees engaged with customers including Motorola Inc., Texas Instruments (now Raytheon), Lockheed Aircraft, Boeing and Burroughs. In the time since our founding, we've managed to be a part of many famous and important projects in human history. The Voyager I & II program, launched in 1977 and still traveling interstellar space today, is emblematic of how customers view AirBorn parts: rugged, reliable and long lasting.

We're proud to be a part of America's, and our allies', vast military and defense initiatives too. AirBorn parts were designed into the Apache & Blackhawk Helicopters, F-16 & F-35 Jets, Abram's & Bradley Tanks and Ohio-Class Attack Subs just to name a few. Our solutions are also part of Patriot, Javelin, Hellfire, Tomahawk and THAAD missile programs. We excel at providing unfailing quality to mission-critical applications.

While military/defense and aviation applications are our specialty, we by no means stop there. AirBorn parts are an integral part of commercial aircraft, MRI machines, defibrillators as well as pain management systems. From deep sea to deep space, AirBorn connectors are ready for any challenge.





Mars Rovers



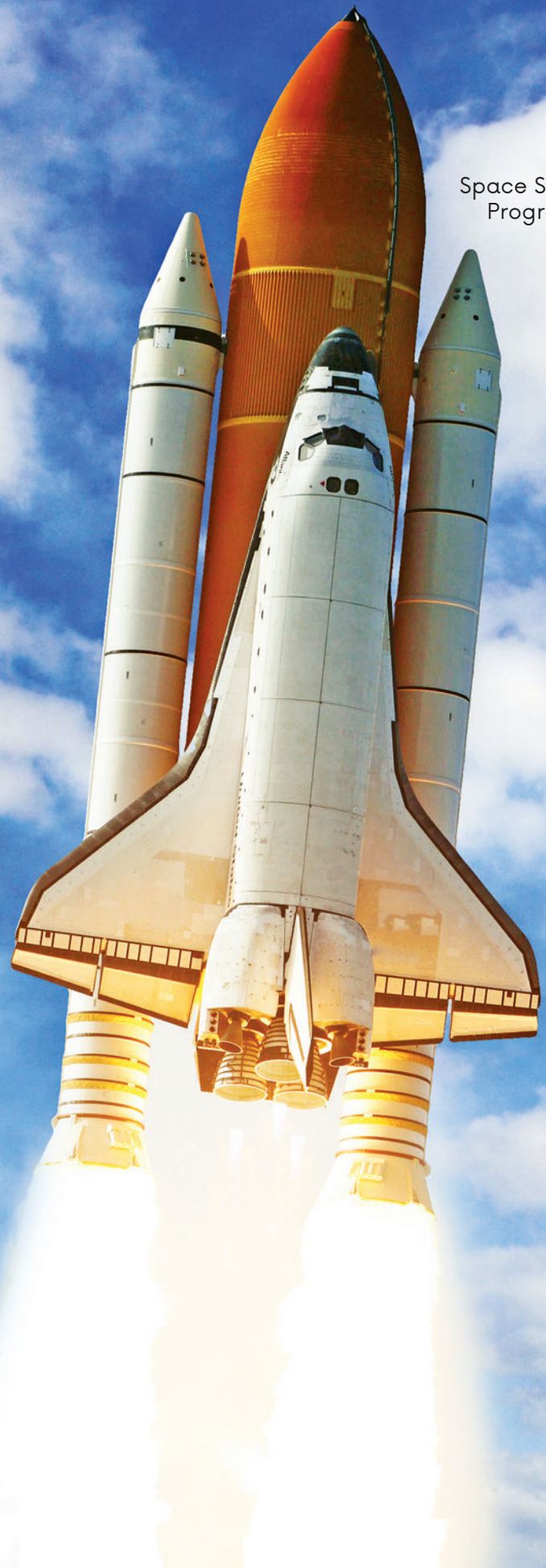
Commercial Airliners



Military Communications & Rifle Scopes



Pain Management Systems



Space Shuttle Program



# verSI Overview



## verSI: High-Speed & High Reliability

The AirBorn verSI (**Versatile Signal Integrity**) open-pin field product line is designed to meet the requirements for high-speed/high-density/signal integrity 100  $\Omega$  differential serial bus applications while still delivering the reliability customers have come to expect from AirBorn.

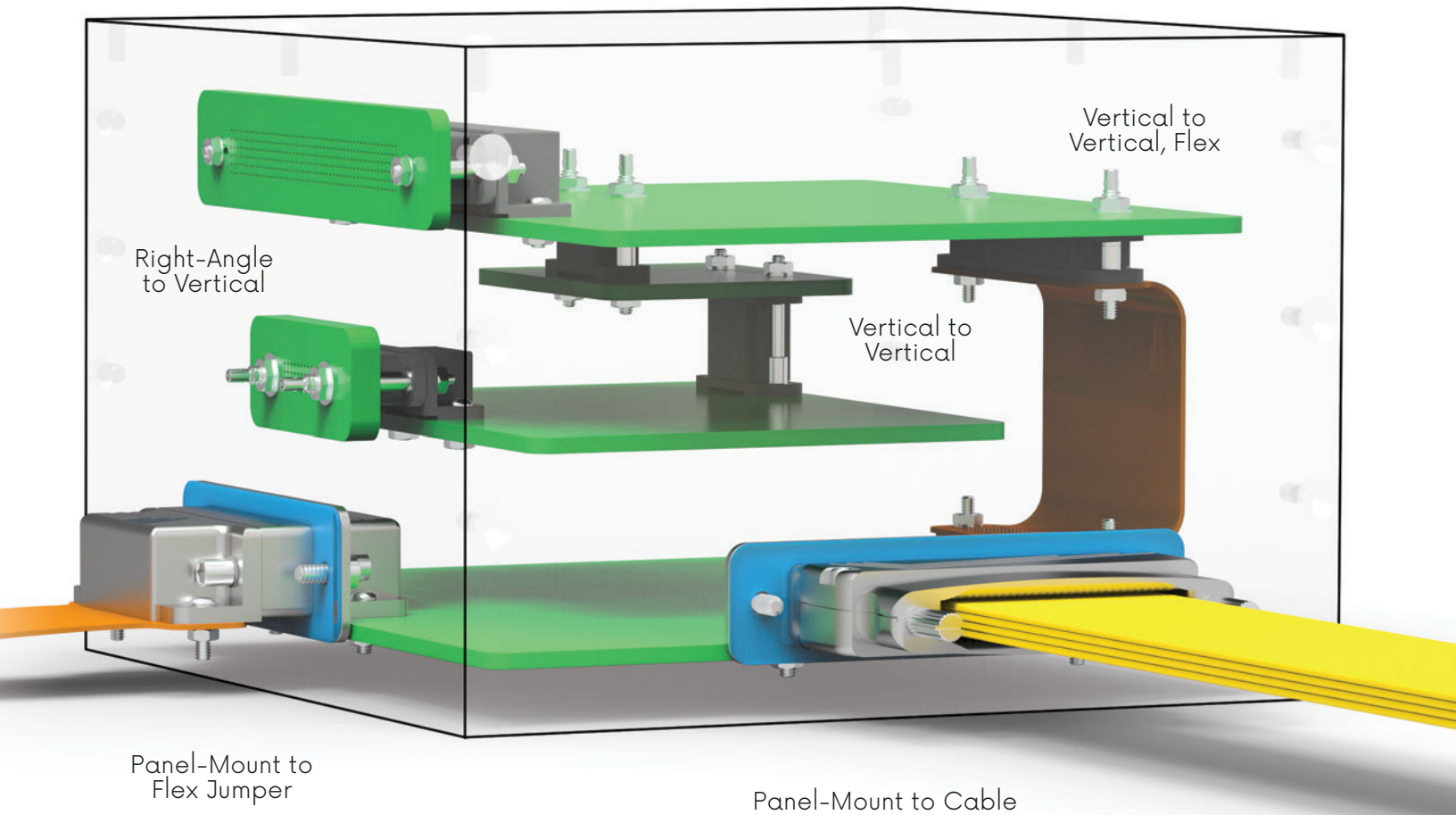
Please visit [airborn.com/versi](http://airborn.com/versi) to configure a part numbers, learn more about electrical models, review more product specification details, or read our the verSI signal integrity performance white paper. ESL6004 qualification testing information is also available online.

### Key Features & Benefits:

- 2-, 4-, 5-, 6-, 8-, & 10-row models available
- 10-500 pin/socket positions
- 5-50 columns
- Plastic & metal body materials
- Ruggedized models for tougher applications
- Works well with flexible circuits
- Locking & jacking mating/mounting hardware
- Guide hardware - blind mating
- 10,000 mating cycles
- .050 x .050 pitch
- Panel-mounting option



# Excellent Design Flexibility



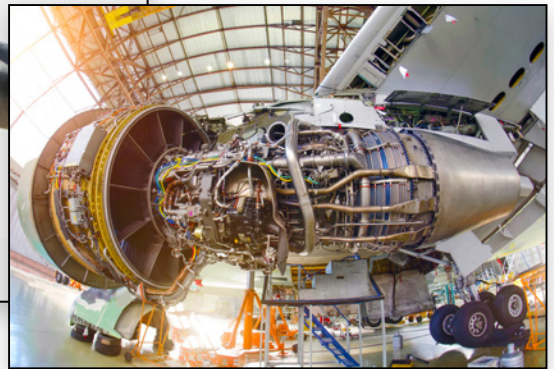
## OEMs Worldwide Trust verSI's Versatility

The verSI product family affords flexibility in design by offering vertical board-mount, right-angle board-mount, cable I/O, and flex circuit mounting with 40 to 500 contacts. Vertical board-mount plugs and mating vertical receptacles also support board-to-board stacking applications. Board-spacing ranges from 8mm to 25mm. EMI hoods and mounting tabs allow for worry-free mating/un-mating and best-in-class durability.

The AirBorn verSI offers several board termination types including paste-in-hole, thru-hole, surface-mount, and compliant pin press fit technology, which eliminates the need for costly X-ray inspection.



# Critical to Success Applications



## Ruggedness & Reliability: Keys to Surviving the Harshest Applications

When it comes to durability in the face of unforgiving conditions, they don't come any tougher than AirBorn's verSI Series connectors. Whether they're enduring the extreme shock and vibration of a rocket launch, the unrelenting repetition of factory robotics, or the temperature fluctuations inherent with commercial air travel, verSI connectors are designed to withstand all of that and much more.

Looking for a rugged and reliable connector that's endured the harshest environments of Earth and space, look no further than AirBorn's verSI family of connectors. With the quality that AirBorn's customers can count on and space-flight heritage, verSI Series connectors set the standard for toughness.

### Applications

- Satellite vision systems
- Ground combat vehicles
- Radar defense systems
- Commercial aircraft
- MRI machines (non-magnetic)
- Missile systems
- Avionics control unit
- Cube satellites
- Commercial flight equipment

# verSIs Are Designed Into:



Avionics



Helicopters



Satellites

And More...



MRI Machines



Commercial Aircraft



## V2M — Vertical Male

V2M signal-integrity connectors are ruggedized 2-row male connectors. With the proven verSI contact system, these connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance. Pitch: .050" (1.27 mm).



### Sample Part Number Format: V2M-02-05-080-50-00-N

V2M	02	05	080	50		
<b>SERIES</b> Vertical (Male) 1.27 mm	<b>ROWS</b> 02 – 2 Rows	<b>COLUMNS</b> 05 – 5 Columns	<b>BOARD SPACING*</b> 080 – 8 mm <sup>4</sup>	<b>CONTACT PLATING</b> 50 – 50 μ" Au mating interface	<b>TERMINATION</b> 00 – Press-fit 01 – Paste-in-hole 02 – PTH 0.078" 03 – PTH 0.109" 04 – PTH 0.140" 05 – PTH 0.156" 06 – PTH 0.172" 10 – SMT - Non-RoHS compliant 11 – SMT - RoHS compliant	<b>HARDWARE<sup>1</sup></b> G – Guide pin <sup>2</sup> N – Fixed jacknut <sup>2</sup> J – Turning jackscrew <sup>2</sup> L – Locking screw <sup>2</sup> G1 – Guide pin <sup>3</sup> N1 – Fixed jacknut <sup>3</sup> J1 – Turning jackscrew <sup>3</sup> L1 – Locking screw <sup>2</sup>

### Notes:

See AirBorn spec ESL6155 for additional information.

See AirBorn spec ESL5001 for installation information.

<sup>1</sup> See product spec drawing for replacement hardware kits.

<sup>2</sup> Used for PC board thickness up to 0.125".

<sup>3</sup> Used for PC board thickness 0.125" up to 0.250".

<sup>4</sup> Board spacing 8.29mm.

Hardware supplied loosely installed.

Mates with connector series: V2F and V2C (female).

Dimensions within brackets [X, XX] are in millimeters and for reference only.

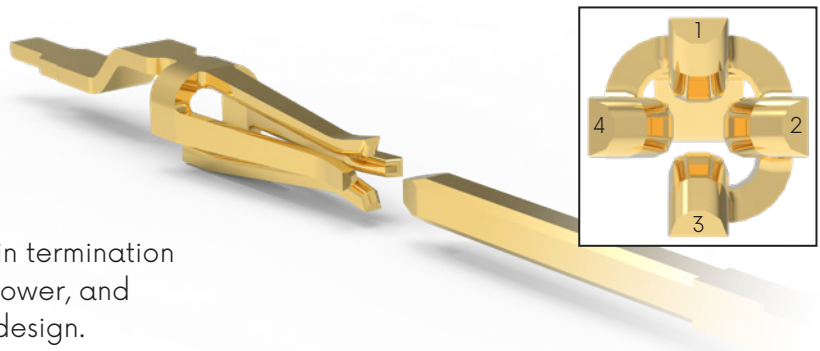
Please view product spec drawing V2M-XX-XX-XXX-XX-XX-X on [airborn.com](http://airborn.com) before part configuration for complete product definition.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

## Reliable Contact Every Time

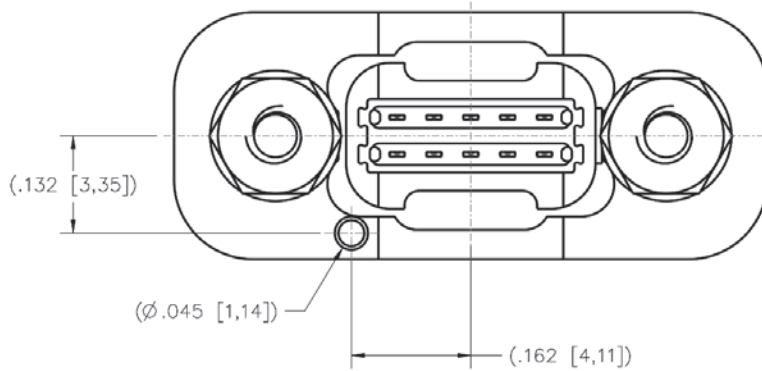
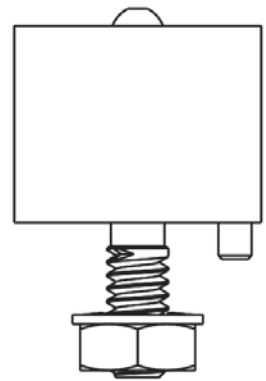
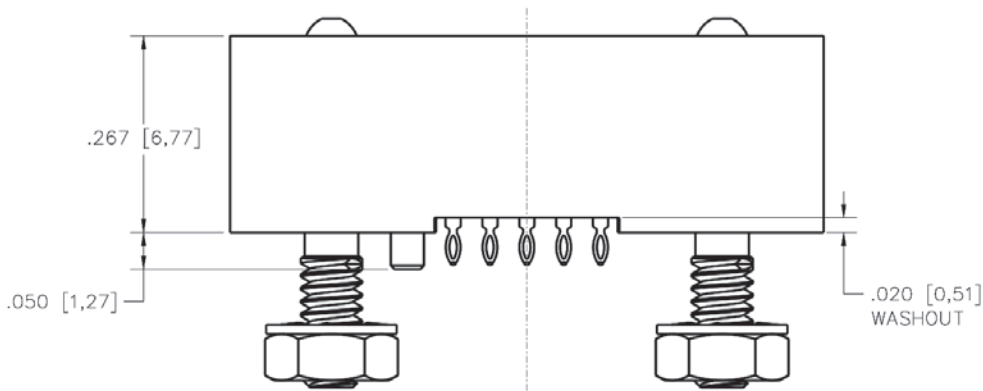
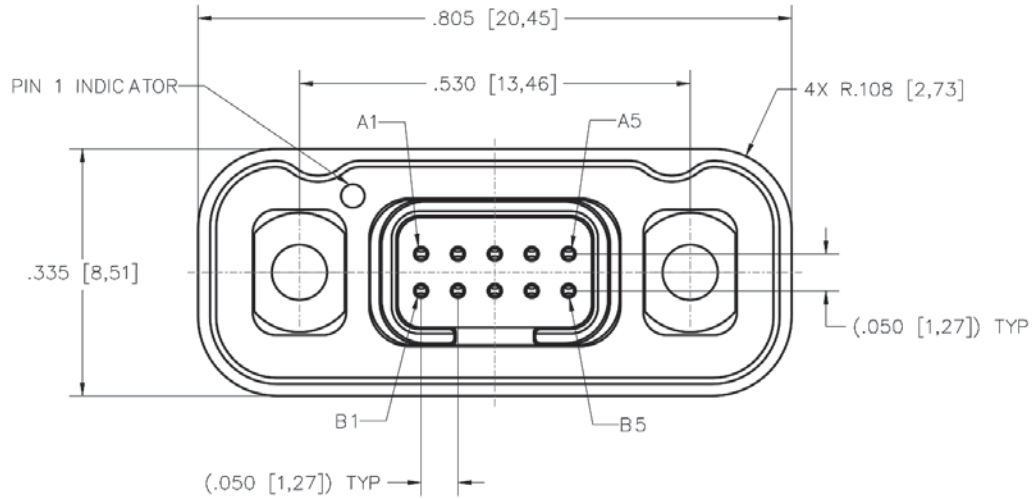
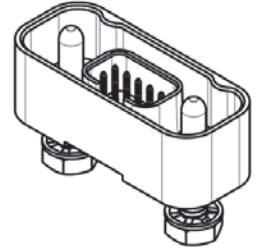
VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



# Dimensions

ISOMETRIC VIEW  
FOR REFERENCE ONLY  
(PART NUMBER: V2M-02-05-080-50-00-G SHOWN)



Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.



## V2F — Vertical Rugged Female

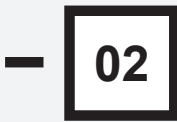
V2F signal-integrity connectors are ruggedized 2-row female connectors. With the proven verSI contact system, these connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance Pitch: 0.050" [1.27 mm].



### Sample Part Number Format: V2F-02-05-50-00-J



**SERIES**  
Vertical Rugged  
(Female) 1.27 mm



**ROWS**  
02 – 2 Rows



**COLUMNS**  
05 – 5 Columns



**CONTACT PLATING**  
50 – 50 μ" Au mating interface



**TERMINATION**  
00 – Press-fit  
01 – Paste-in-hole  
02 – PTH 0.078"  
03 – PTH 0.109"  
04 – PTH 0.140"  
05 – PTH 0.156"  
06 – PTH 0.172"  
10 – SMT - Non RoHS compliant  
11 – SMT - RoHS compliant



**HARDWARE<sup>1</sup>**  
G – Guide socket<sup>2</sup>  
N – Fixed jacknut<sup>2</sup>  
J – Turning jackscrew<sup>2</sup>  
L – Locking screw<sup>2</sup>  
G1 – Guide socket<sup>3</sup>  
N1 – Fixed jacknut<sup>3</sup>  
J1 – Turning jackscrew<sup>3</sup>  
L1 – Locking screw<sup>3</sup>

### Notes:

See AirBorn spec ESL6155 for additional information.

See AirBorn spec ESL5001 for installation information.

<sup>1</sup> See product specification drawing for replacement hardware kits.

<sup>2</sup> Used for PC board thickness up to 0.125".

<sup>3</sup> Used for PC board thickness 0.125" up to 0.250".

Hardware supplied loosely installed.

Mates with connector series: V2M and V2C (male).

Dimensions within brackets [X, XX] are in millimeters and for reference only.

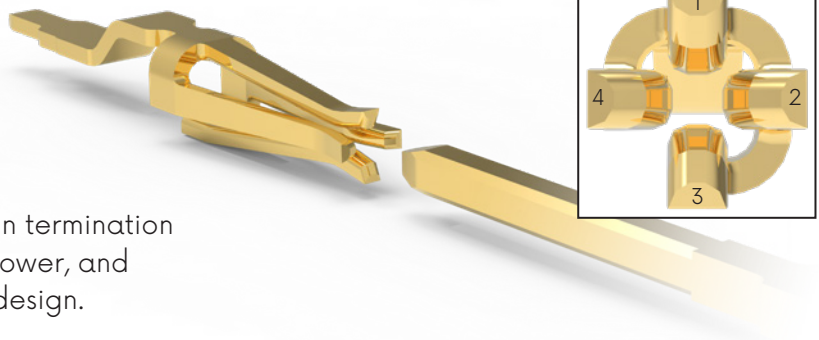
Please view product information drawing V2F-XX-XX-XX-XX-X on [airborn.com](http://airborn.com) before part configuration for complete product definition.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

## Reliable Contact Every Time

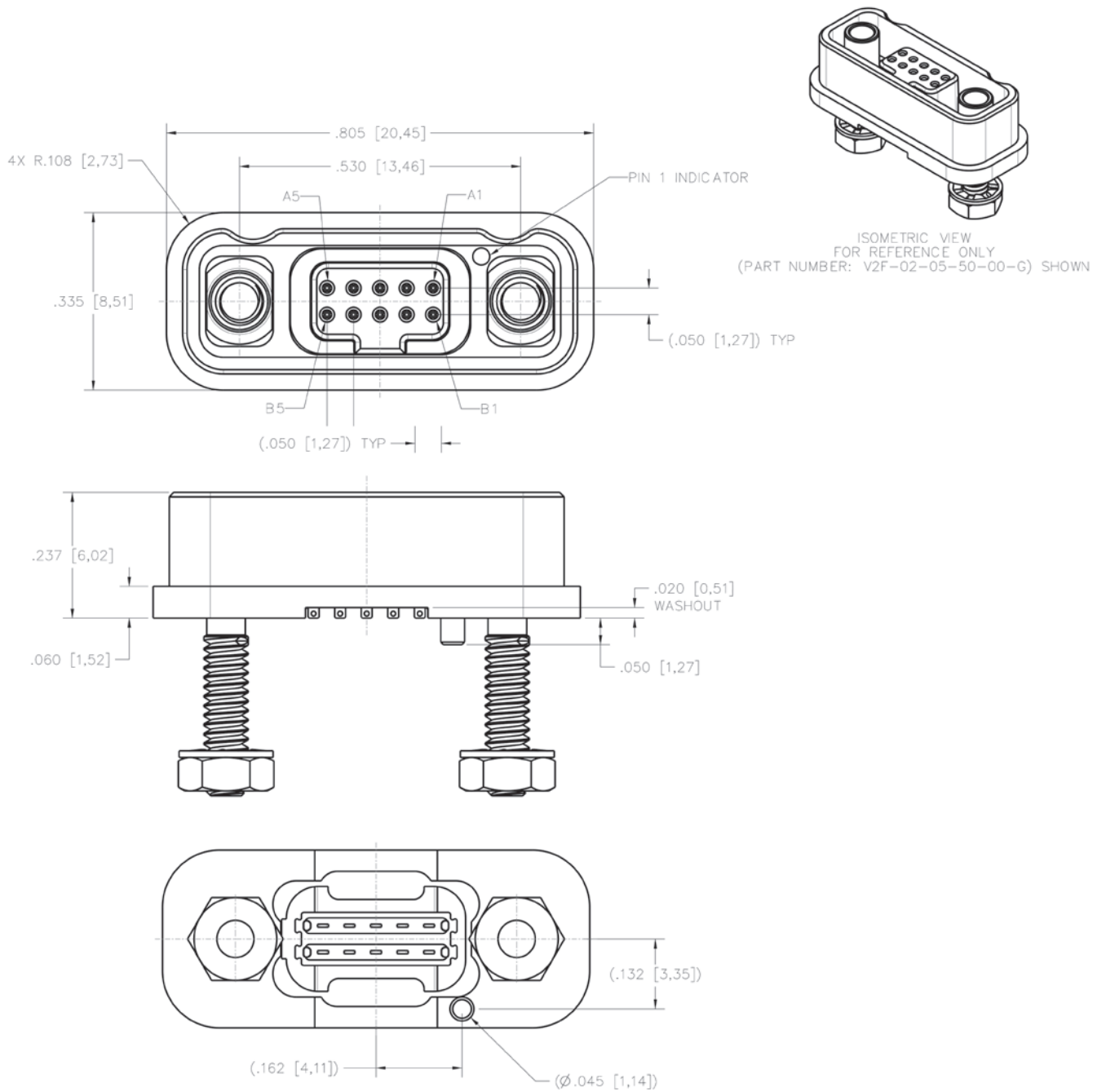
VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.





# Dimensions



Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.



## V2C — Differential Pair Twinax Cable Assembly

V2C cable assemblies are designed for twinax and/or discrete wire applications. These cable assemblies come in standard lengths but custom lengths and configurations can also be requested. Ruggedized hoods are standard. Pitch: .050" [1.27 mm].



Sample Part Number Format: V2C-02-05-50-MN-BB-304-010

V2C	02	05	50				
<b>SERIES</b> verSI 2-Row Cable Assembly	<b>ROWS</b> 02 – 2 Rows	<b>COLUMNS</b> 05 – 5 Columns	<b>CONTACT PLATING</b> 50 – 50 μ" Au mating interface	<b>CONNECTOR 1</b> MG – Male with guide pins MN – Male with fixed jacknut MJ – Male turning jackscrew ML – Male with locking screw MGP – Male with guide pins, panel mount MNP – Male with fixed jacknut, panel mount MJP – Male with turning jackscrew, panel mount MLP – Male with locking screw, panel mount FG – Female with guide pins FN – Female fixed jacknut FJ – Female with turning jackscrew FL – Female with locking screw FGP – Female with guide pins, panel mount FNP – Female with fixed jacknut, panel mount FJP – Female with turning jackscrew, panel mount FLP – Female with locking screw, panel mount	<b>CONNECTOR 2 HARDWARE</b> MG – Male with guide pins MN – Male with fixed jacknut MJ – Male turning jackscrew ML – Male with locking screw MGP – Male with guide pins, panel mount MNP – Male with fixed jacknut, panel mount MJP – Male with turning jackscrew, panel mount MLP – Male with locking screw, panel mount FG – Female with guide pins FN – Female with fixed jacknut FJ – Female with turning jackscrew FL – Female with locking screw FGP – Female with guide pins, panel mount FNP – Female with fixed jacknut, panel mount FJP – Female with turning jackscrew, panel mount FLP – Female with locking screw, panel mount BB – No second connector	<b>AWG/LAYOUT</b> 302 – 30AWG, 2 differential pairs 303 – 30AWG, 3 differential pairs 304 – 30AWG, 4 differential pairs 282 – 28AWG, 2 differential pairs 283 – 28AWG, 3 differential pairs 284 – 28AWG, 4 differential pairs 262 – 26AWG, 2 differential pairs 30M – 30AWG, mixed discrete 26M – 26AWG, mixed discrete 30W – 30AWG, discrete white 26W – 26AWG, discrete white 30C – 30AWG, color- coded wires* 26C – 26AWG, color- coded wires* SCT – Solder cup termination, no wires	<b>LENGTH<sup>1</sup></b> 000 – 0.00 M** 010 – 0.10 M 020 – 0.20 M 030 – 0.30 M 040 – 0.40 M 050 – 0.50 M 060 – 0.60 M 070 – 0.70 M 080 – 0.80 M 090 – 0.90 M 100 – 1.00 M 150 – 1.50 M 200 – 2.00 M 300 – 3.00 M

### Notes:

See AirBorn spec ESL5001 for installation information.

<sup>1</sup>Color coded per MIL-STD-681.

AirBorn can manufacture other configurations to your exact specifications.

Please view product specification drawing V2C-XX-XX-XX-XXX-XXX-XXX-XXX on [airborn.com](http://airborn.com) before part configuration for more product specification information.

Dimensions within brackets [X, XX] are in millimeters and for reference only.

\*\*Used in conjunction with solder-cup termination (SCT) only.

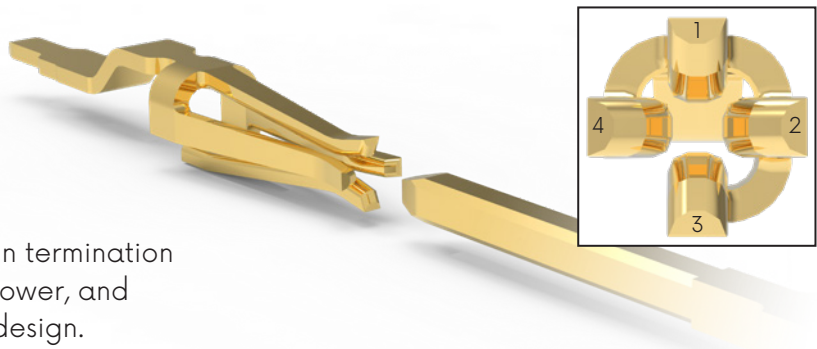
<sup>1</sup>See product specification drawing for replacement hardware kits.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

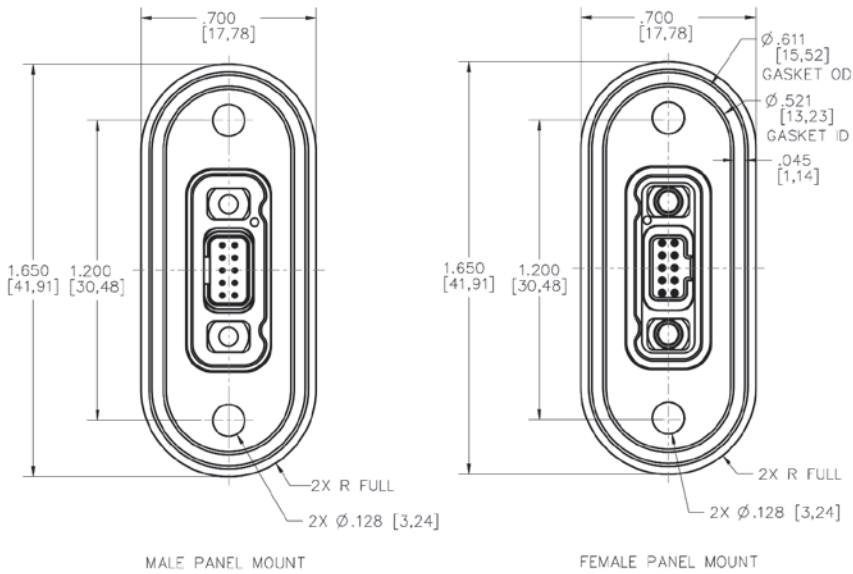
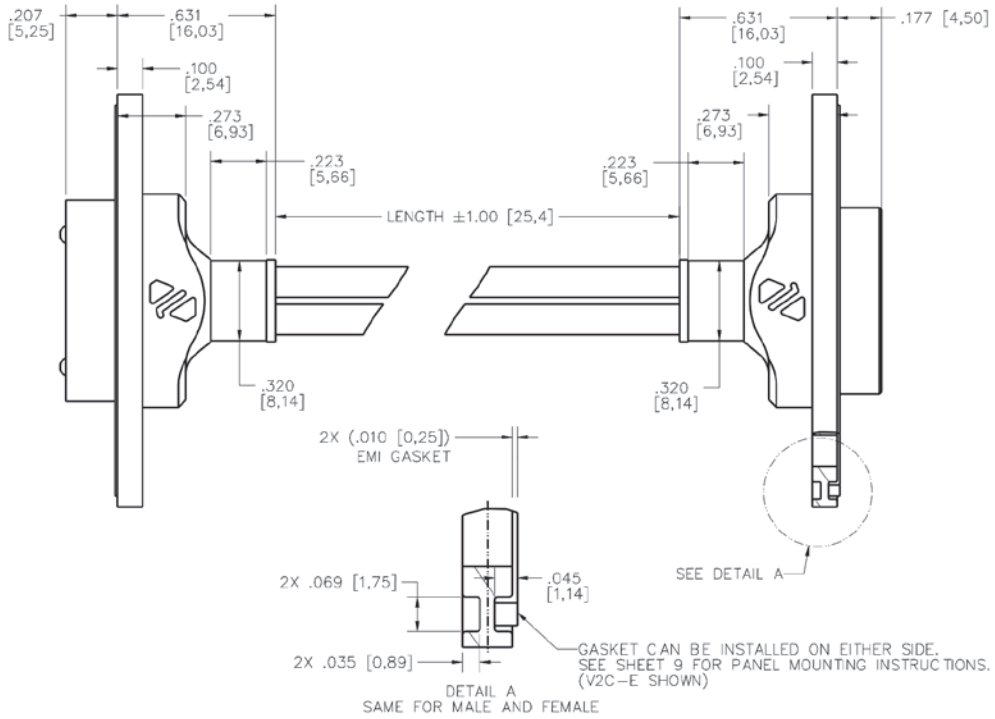
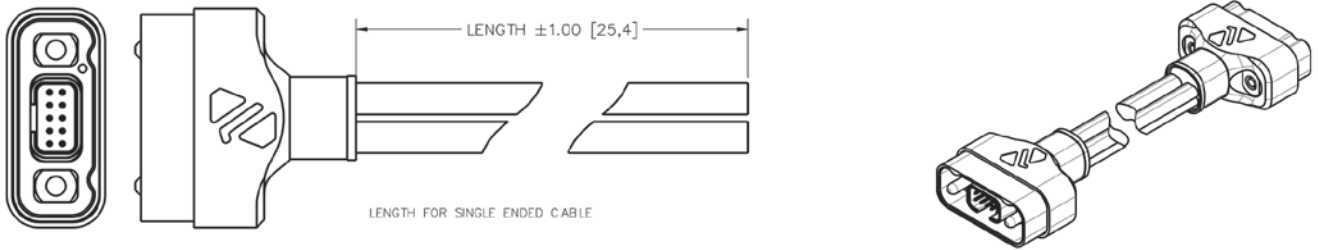
## Reliable Contact Every Time

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The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



# Dimensions



Length		
Code	Length (M)	Length (In.)
010	0,10	3.94
020	0,20	7.87
030	0,30	11.81
040	0,40	15.75
050	0,50	19.69
060	0,60	23.62
070	0,70	27.56
080	0,80	31.50
090	0,90	35.43
100	1,00	39.37
150	1,50	59.06
200	2,00	78.74
300	3,00	118.11

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.



## VSM — Vertical Male

VSM signal-integrity connectors are used in vertical, PCB-mount applications where a male interface is required. Termination styles include press-fit, paste-in-hole and plated thru-hole. Pitch: 1.27 mm.



### Sample Part Number Format: VSM-04-10-120-50-02-L



**SERIES**  
Vertical (Male)  
1.27 mm



**ROWS**  
04 – 4 Rows  
05 – 5 Rows  
06 – 6 Rows  
08 – 8 Rows  
10 – 10 Rows



**COLUMNS**  
10 – 10 Columns  
20 – 20 Columns  
30 – 30 Columns  
40 – 40 Columns  
50 – 50 Columns



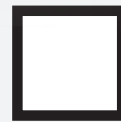
**BOARD SPACING\***  
080 – 8 mm  
100 – 10 mm  
120 – 12 mm  
160 – 16 mm  
200 – 20 mm  
250 – 25 mm



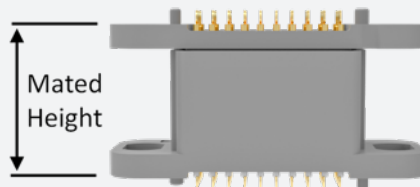
**CONTACT PLATING**  
50 – 50  $\mu$  Au



**TERMINATION**  
00 – Press-fit  
01 – Paste-in-hole  
02 – PTH 0.078"  
03 – PTH 0.109"  
04 – PTH 0.140"  
05 – PTH 0.156"  
06 – PTH 0.172"  
10<sup>†</sup> – SMT - SN63PB37  
Solder Dipped  
11<sup>†</sup> – SMT -  
42Sn/57.6Bi/0.4Ag  
lead free, solder  
dipped



**OPTIONS**  
Blank – No options<sup>‡</sup>  
G – Guide pin<sup>1</sup>  
G1 – Guide pin<sup>2</sup>  
J – Turning jackscrew<sup>1</sup>  
J1 – Turning jackscrew<sup>1</sup>  
L – Locking screw<sup>1</sup>  
L1 – Locking screw<sup>2</sup>  
N – Fixed jacknut<sup>1</sup>  
N1 – Fixed jacknut<sup>2</sup>



Mated Height

Board Spacing		Mated Height (in)
Code	Value	Nominal
080	8mm	0.315 (.350 Max)
100	10mm	0.394 (.429 Max)
120	12mm	0.472 (.507 Max)
160	16mm	0.630 (.665 Max)
200	20mm	0.787 (.822 Max)
250	25mm	0.984 (1.02 Max)

### Notes:

See AirBorn spec ESL5001 for installation information.  
Connector potting is standard.

\* Consult factory for additional board spacing options.

<sup>1</sup> Used for PC board thickness up to 0.125".

<sup>2</sup> Used for PC board thickness 0.125" up to 0.250".

<sup>†</sup> Surface Mount Termination only available on 4 Row vertical connectors.

<sup>‡</sup> No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment.

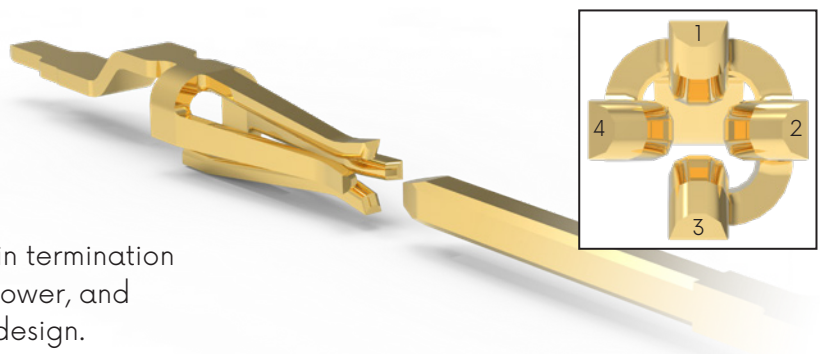
Please view document VSM-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) before part configuration for more product specification information.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

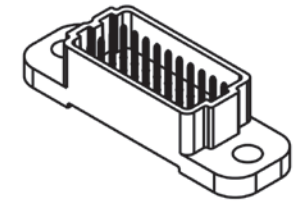
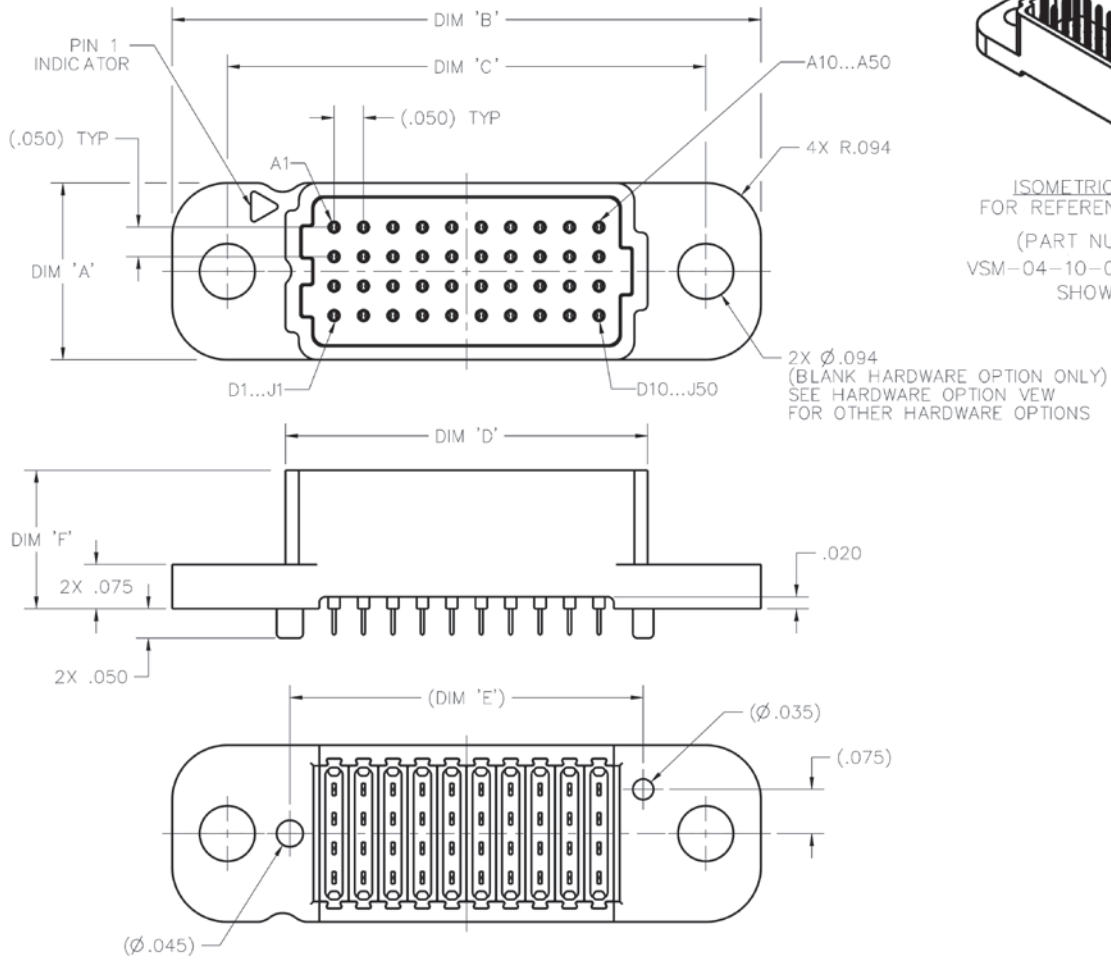
## Reliable Contact Every Time

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CONNECTOR DIMENSIONS  
(BLANK HARDWARE OPTION SHOWN)

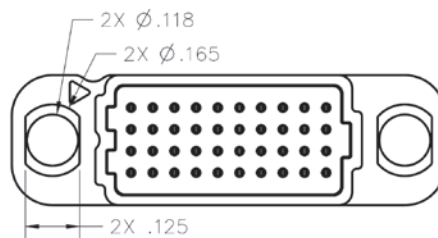


ROWS	DIM 'A'
04	.300
05	.350
06	.400
08	.500
10	.600

COLUMNS	DIM 'B'	DIM 'C'	DIM 'D'	DIM 'E'
10	1.000	.813	.615	.600
20	1.500	1.313	1.115	1.100
30	2.000	1.813	1.615	1.600
40	2.500	2.313	2.115	2.100
50	3.000	2.813	2.615	2.600

BOARD SPACING	DIM 'F'
-080 [8mm]	.235
-100 [10mm]	.314
-120 [12mm]	.392
-160 [16mm]	.550
-200 [20mm]	.707
-250 [25mm]	.904

HARDWARE OPTION VIEW

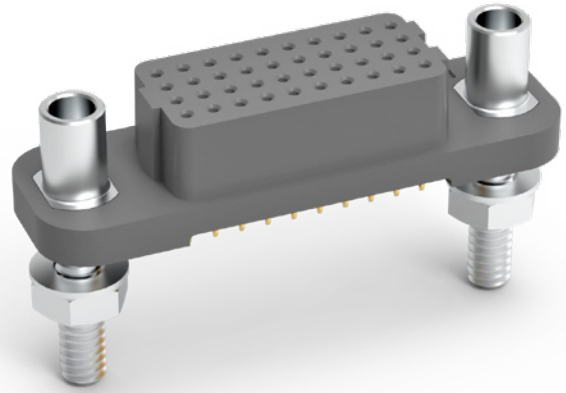


Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.



## VSF — Vertical Female

VSF signal-integrity connectors are used in vertical, PCB-mount applications where a male interface is required. Termination styles include press-fit, paste-in-hole and plated thru-hole. Pitch: 1.27 mm.



### Sample Part Number Format: VSF-04-10-50-02-G



**SERIES**  
Vertical (Female)  
1.27 mm



**ROWS**  
04 – 4 Rows  
05 – 5 Rows  
06 – 6 Rows  
08 – 8 Rows  
10 – 10 Rows



**COLUMNS**  
10 – 10 Columns  
20 – 20 Columns  
30 – 30 Columns  
40 – 40 Columns  
50 – 50 Columns



**CONTACT PLATING**  
50 – 50 μ" Au



**TERMINATION**  
00 – Press-fit  
01 – Paste-in-hole  
02 – PTH 0.078"  
03 – PTH 0.109"  
04 – PTH 0.140"  
05 – PTH 0.156"  
06 – PTH 0.172"  
10<sup>1</sup> – SMT - SN63PB37  
Solder Dipped  
11<sup>1</sup> – SMT - 42Sn/57.6Bi/0.4Ag  
lead free, solder dipped



**OPTIONS**  
Blank – No hardware<sup>2</sup>  
G – Guide socket<sup>1</sup>  
G1 – Guide socket<sup>2</sup>  
J – Turning jackscrew<sup>1</sup>  
J1 – Turning jackscrew<sup>2</sup>  
L – Locking screw<sup>1</sup>  
L1 – Locking screw<sup>2</sup>  
N – Fixed jacknut<sup>1</sup>  
N1 – Fixed jacknut<sup>2</sup>

### Notes:

See AirBorn spec ESL5001 for installation information.  
Connector potting is standard.

<sup>1</sup>Used for PC board thickness up to 0.125"

<sup>2</sup>Used for PC board thickness 0.125" up to 0.250"

<sup>1</sup>Surface Mount Termination only available on 4 Row vertical connectors.

<sup>1</sup> No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment

Please view document VSF-XX-XX-XX-XX-XX on [airborn.com](http://airborn.com) before part configuration for more product specification information

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

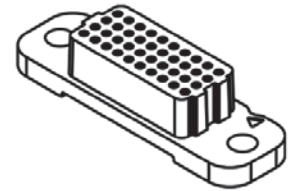
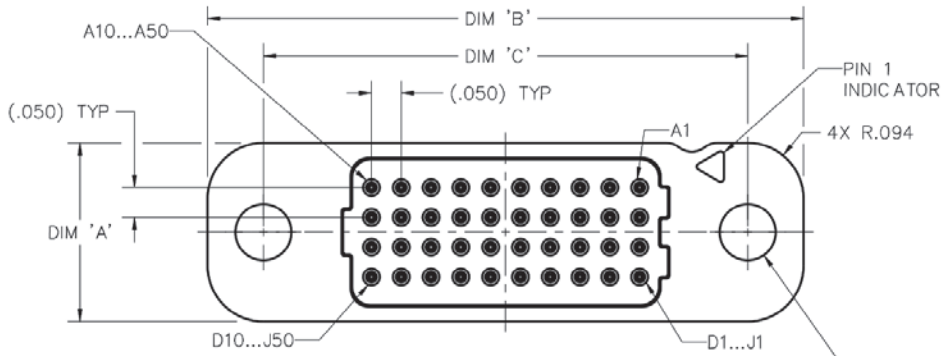
## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

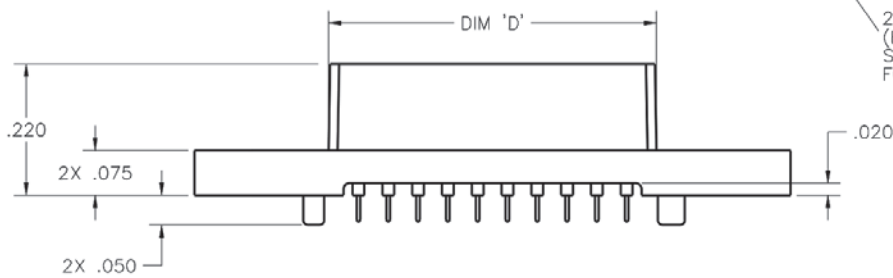


CONNECTOR DIMENSIONS  
(BLANK HARDWARE OPTION SHOWN)

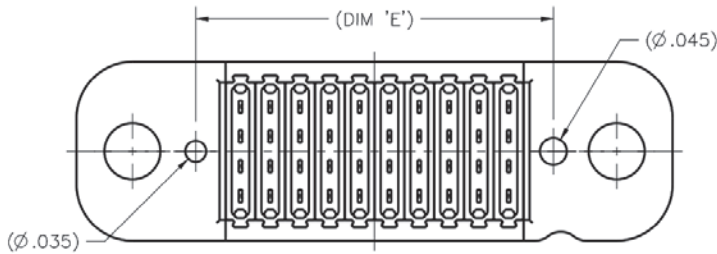


ISOMETRIC VIEW  
FOR REFERENCE ONLY

(PART NUMBER  
VSF-04-10-50-00  
SHOWN)



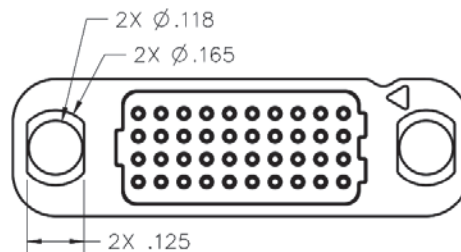
2X  $\phi$ .094  
(BLANK HARDWARE OPTION ONLY)  
SEE HARDWARE OPTION VIEW  
FOR OTHER HARDWARE OPTIONS



ROWS	DIM 'A'
04	.300
05	.350
06	.400
08	.500
10	.600

COLUMNS	DIM 'B'	DIM 'C'	DIM 'D'	DIM 'E'
10	1.000	.813	.550	.600
20	1.500	1.313	1.050	1.100
30	2.000	1.813	1.550	1.600
40	2.500	2.313	2.050	2.100
50	3.000	2.813	2.550	2.600

HARDWARE OPTION VIEW

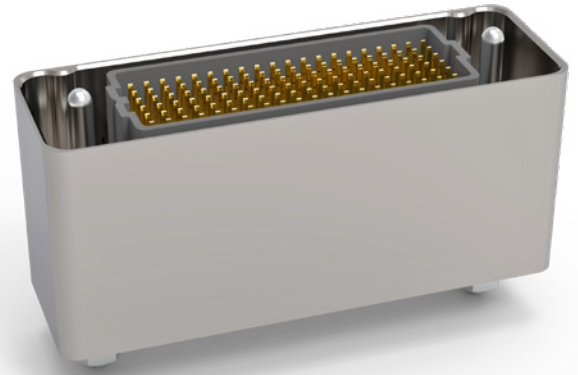


Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

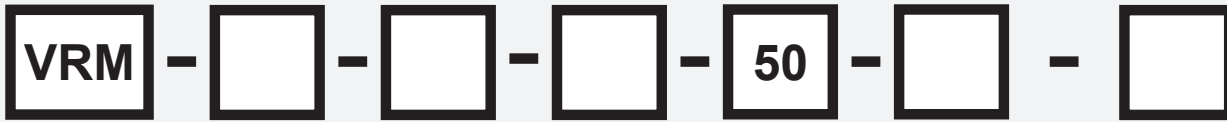


## VRM — Vertical Rugged Male

VRM signal-integrity connectors are ruggedized versions of the standard VSM male connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance. Pitch: 1.27 mm.



### Sample Part Number Format: VRM-04-10-120-50-02-G



**SERIES**  
Vertical Rugged  
(Male) 1.27 mm

**ROWS**  
04 – 4 Rows  
05 – 5 Rows  
06 – 6 Rows  
08 – 8 Rows  
10 – 10 Rows

**COLUMNS**  
10 – 10 Columns  
20 – 20 Columns  
30 – 30 Columns  
40 – 40 Columns  
50 – 50 Columns

**BOARD SPACING\***  
080 – 8 mm  
100 – 10 mm  
120 – 12 mm  
160 – 16 mm  
200 – 20 mm  
250 – 25 mm

**CONTACT PLATING**  
50 – 50 μ" Au

**TERMINATION**  
00 – Press-fit  
01 – Paste-in-hole  
02 – PTH 0.078"  
03 – PTH 0.109"  
04 – PTH 0.140"  
05 – PTH 0.156"  
06 – PTH 0.172"  
10<sup>†</sup> – SMT - SN63PB37  
Solder Dipped  
11<sup>†</sup> – SMT -  
42Sn/57.6Bi/0.4Ag  
lead free, solder  
dipped

**OPTIONS**  
Blank – No options<sup>‡</sup>  
G – Guide pin<sup>\*\*1</sup>  
G1 – Guide pin<sup>\*\*2</sup>  
J – Turning jackscrew<sup>\*\*1</sup>  
J1 – Turning jackscrew<sup>\*\*2</sup>  
L – Locking screw<sup>\*\*1</sup>  
L1 – Locking screw<sup>\*\*2</sup>  
N – Fixed jacknut<sup>\*\*1</sup>  
N1 – Fixed jacknut<sup>\*\*2</sup>  
E – No Hardware/EMI gasket<sup>‡</sup>  
GE – Guide pin/EMI gasket<sup>\*\*1</sup>  
G1E – Guide pin/EMI gasket<sup>\*\*2</sup>  
JE – Turning jackscrew/EMI gasket<sup>\*\*1</sup>  
J1E – Turning jackscrew/EMI gasket<sup>\*\*2</sup>  
LE – Locking screw/EMI gasket<sup>\*\*1</sup>  
L1E – Locking screw/EMI gasket<sup>\*\*2</sup>  
NE – Fixed jacknut/EMI gasket<sup>\*\*1</sup>  
N1E – Fixed jacknut/EMI gasket<sup>\*\*2</sup>

#### Notes:

See AirBorn spec ESL5001 for installation information.  
Connector potting is standard.

\* Consult factory for additional board spacing options.

\*\* Not available with 8 mm board spacing

<sup>1</sup> Used for PC board thickness up to 0.125"

<sup>2</sup> Used for PC board thickness 0.125" up to 0.250"

<sup>†</sup> Surface Mount Termination only available on 4 Row vertical connectors.

<sup>‡</sup> No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment

Please view document VRM-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) before part configuration for more product specification information



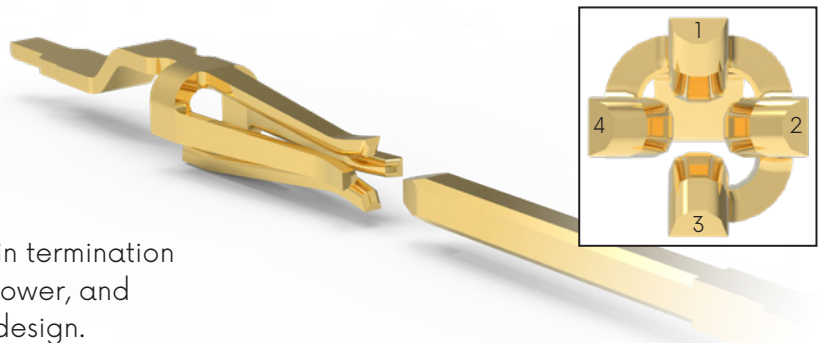
Board Spacing		Mated Height (in)
Code	Value	Nominal
080	8mm	0.315 (.350 Max)
100	10mm	0.394 (.429 Max)
120	12mm	0.472 (.507 Max)
160	16mm	0.630 (.665 Max)
200	20mm	0.787 (.822 Max)
250	25mm	0.984 (1.02 Max)

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

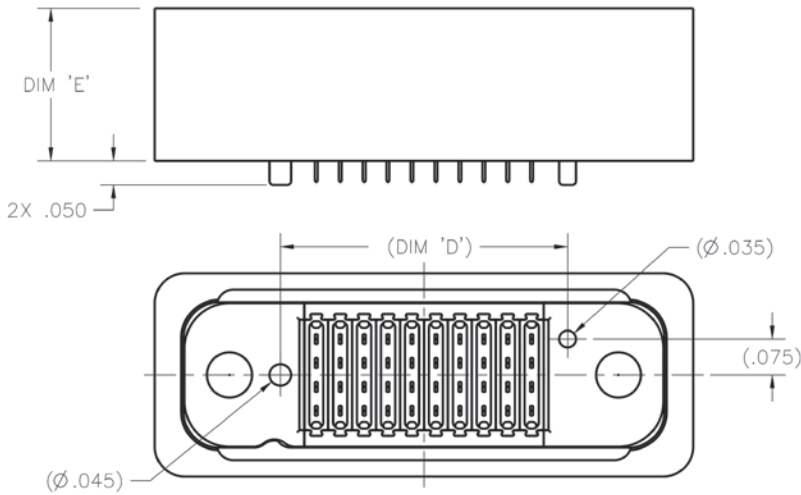
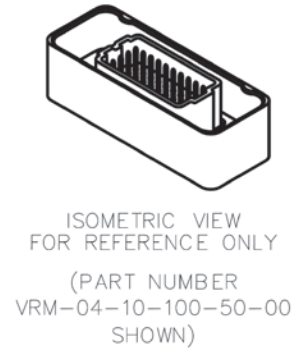
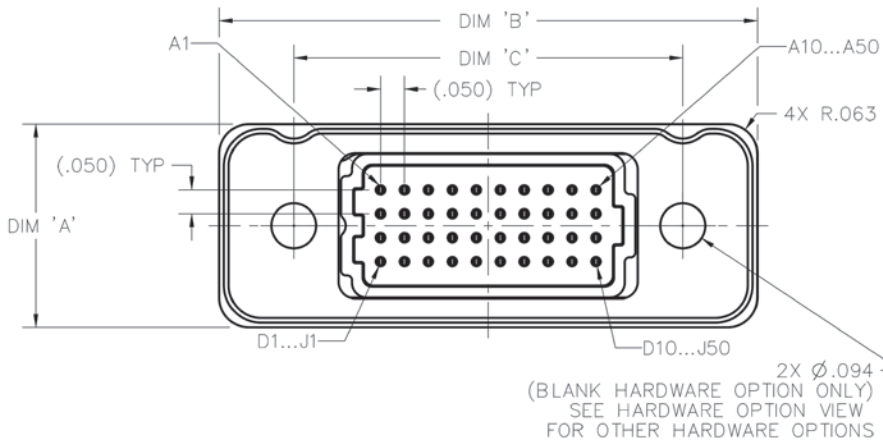
## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



CONNECTOR DIMENSIONS  
(NON EMI GASKET HARDWARE OPTIONS)

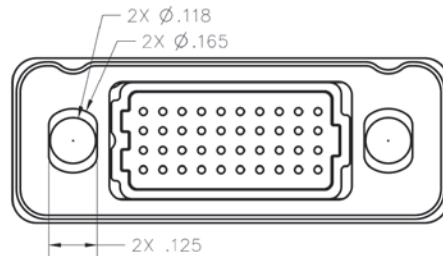


ROWS	DIM 'A'
04	.425
05	.475
06	.525
08	.625
10	.725

COLUMNS	DIM 'B'	DIM 'C'	DIM 'D'
10	1.125	.813	.600
20	1.625	1.313	1.100
30	2.125	1.813	1.600
40	2.625	2.313	2.100
50	3.125	2.813	2.600

BOARD SPACING	DIM 'E'
-080 [8mm]	.240
-100 [10mm]	.319
-120 [12mm]	.397
-160 [16mm]	.555
-200 [20mm]	.712
-250 [25mm]	.909

HARDWARE OPTION VIEW

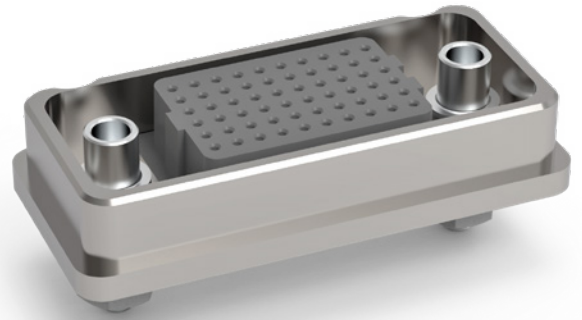


Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.



## VRF — Vertical Rugged Female

VRF signal-integrity connectors are ruggedized versions of the standard VSF female connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance  
Pitch: 1.27 mm.



### Sample Part Number Format: VRF-04-10-50-50-04-G



**SERIES**  
Vertical Rugged  
(Female) 1.27 mm



**ROWS**  
04 – 4 Rows  
05 – 5 Rows  
06 – 6 Rows  
08 – 8 Rows  
10 – 10 Rows



**COLUMNS**  
10 – 10 Columns  
20 – 20 Columns  
30 – 30 Columns  
40 – 40 Columns  
50 – 50 Columns



**CONTACT PLATING**  
50 – 50  $\mu$  Au



**TERMINATION**  
00 – Press-fit  
01 – Paste-in-hole  
02 – PTH 0.078"  
03 – PTH 0.109"  
04 – PTH 0.140"  
05 – PTH 0.156"  
06 – PTH 0.172"  
10<sup>†</sup> – SMT - SN63PB37  
Solder Dipped  
11<sup>†</sup> – SMT - 42Sn/57.6Bi/0.4Ag  
lead free, solder dipped



**OPTIONS**  
Blank – No hardware<sup>2</sup>  
G – Guide socket<sup>2</sup>  
G1 – Guide socket<sup>2</sup>  
J – Turning jackscrew<sup>1</sup>  
J1 – Turning jackscrew<sup>2</sup>  
L – Locking screw<sup>1</sup>  
L1 – Locking screw<sup>2</sup>  
N – Fixed jacknut<sup>1</sup>  
N1 – Fixed jacknut<sup>2</sup>  
E – No hardware/EMI gasket<sup>2</sup>  
GE – Guide socket/EMI gasket<sup>1</sup>  
G1E – Guide socket/EMI gasket<sup>2</sup>  
JE – Turning jackscrew/EMI gasket<sup>1</sup>  
J1E – Turning jackscrew/EMI gasket<sup>2</sup>  
LE – Locking screw/EMI gasket<sup>1</sup>  
L1E – Locking screw/EMI gasket<sup>2</sup>  
NE – Fixed jacknut/EMI gasket<sup>1</sup>  
N1E – Fixed jacknut/EMI gasket<sup>2</sup>

### Notes:

See AirBorn spec ESL5001 for installation information.  
Connector potting is standard.

<sup>1</sup>Used for PC board thickness up to 0.125".

<sup>2</sup>Used for PC board thickness 0.125" up to 0.250".

<sup>†</sup>Surface Mount Termination only available on 4 Row vertical connectors.

<sup>†</sup>No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment.

Please view document VRF-XX-XX-XX-XX-XX on [airborn.com](http://airborn.com) before part configuration for more product specification information.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

## Reliable Contact Every Time

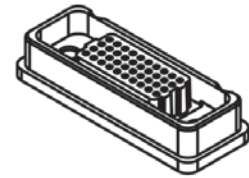
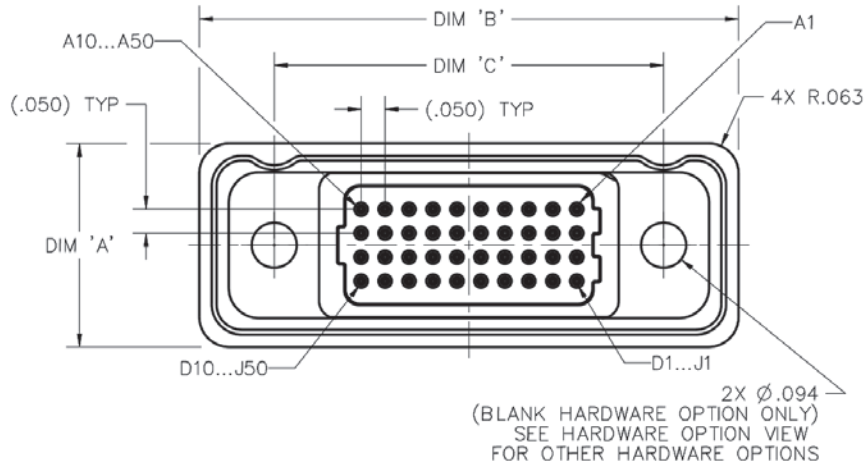
VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

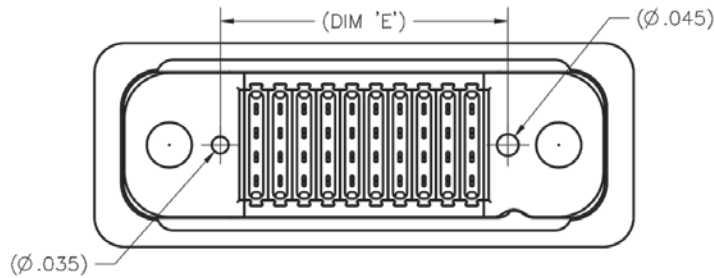
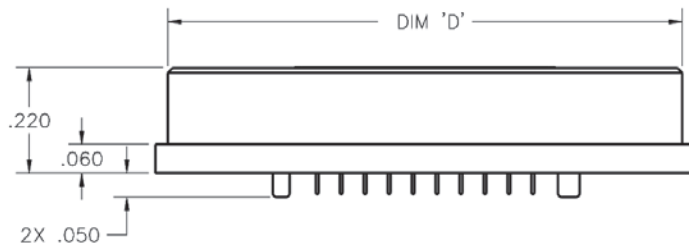


# Dimensions

## CONNECTOR DIMENSIONS (NON EMI GASKET HARDWARE OPTIONS)



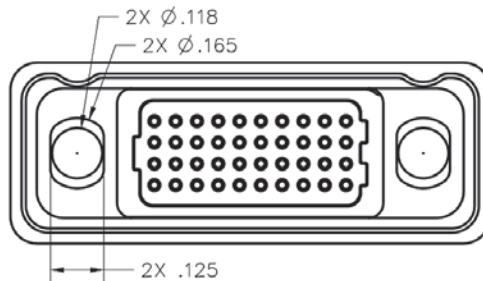
ISOMETRIC VIEW  
FOR REFERENCE ONLY  
(PART NUMBER  
VRF-04-10-50-00  
SHOWN)



ROWS	DIM 'A'
04	.425
05	.475
06	.525
08	.625
10	.725

COLUMNS	DIM 'B'	DIM 'C'	DIM 'D'	DIM 'E'
10	1.125	.813	1.073	.600
20	1.625	1.313	1.573	1.100
30	2.125	1.813	2.073	1.600
40	2.625	2.313	2.573	2.100
50	3.125	2.813	3.073	2.600

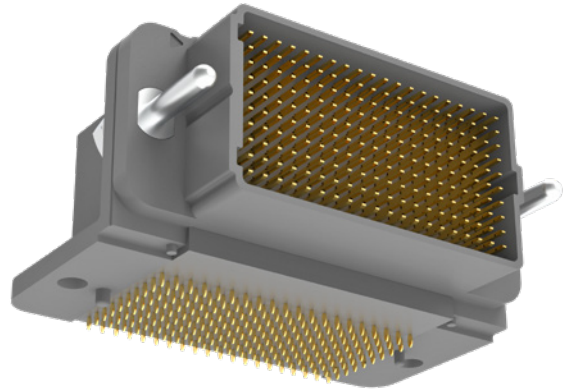
## HARDWARE OPTION VIEW



Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## VSRAM — Right Angle Male

VSRAM signal-integrity connectors are used in right angle, PCB-mount applications where a male interface is required. Termination styles include press-fit, paste-in-hole or plated thru-hole. Pitch: 1.27 mm.



### Sample Part Number Format: VSRAM-04-10-50-50-02-G

<b>VSRAM</b>	—	—	—	<b>50</b>	—	—	—
<b>SERIES</b> Right Angle (Male) 1.27 mm		<b>ROWS</b> 04 – 4 Rows 05 – 5 Rows 06 – 6 Rows 08 – 8 Rows 10 – 10 Rows	<b>COLUMNS</b> 10 – 10 Columns 20 – 20 Columns 30 – 30 Columns 40 – 40 Columns 50 – 50 Columns	<b>CONTACT PLATING</b> 50 – 50 μ" Au	<b>TERMINATION</b> 00 – Press-fit 01 – Paste-in-hole 02 – PTH 0.078" 03 – PTH 0.109" 04 – PTH 0.140" 05 – PTH 0.156" 06 – PTH 0.172"	<b>OPTIONS</b> Blank – No options* G – Guide pin N – Fixed jacknut J – Turning jackscrew L – Locking screw	

### Notes:

See AirBorn spec ESL5001 for installation information.  
Connector potting is standard.

\* No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Complaint; certificate of conformance available upon request with each shipment.

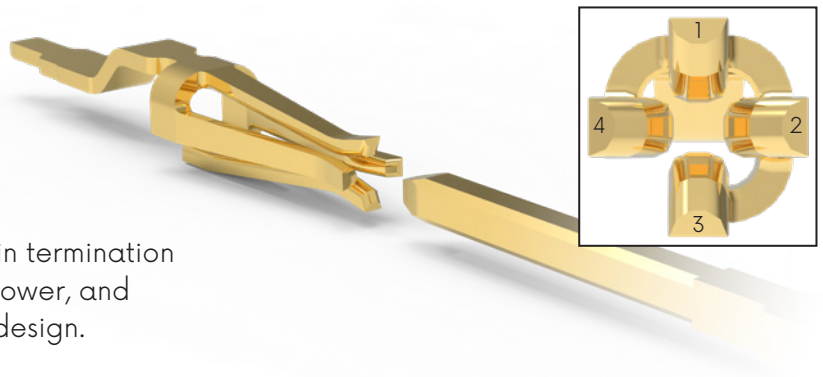
Please view document VSRAM-XX-XX-XX-XX-X on [airborn.com](http://airborn.com) before part configuration for more product specification information.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

## Reliable Contact Every Time

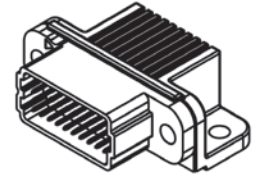
VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

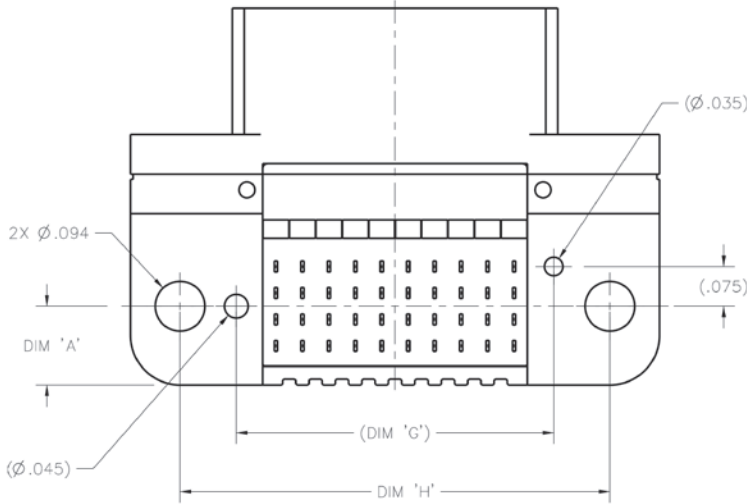
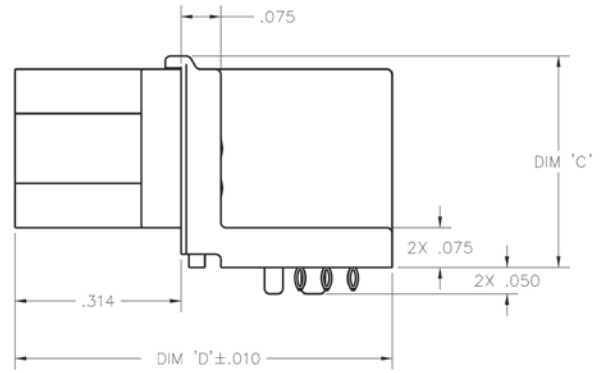
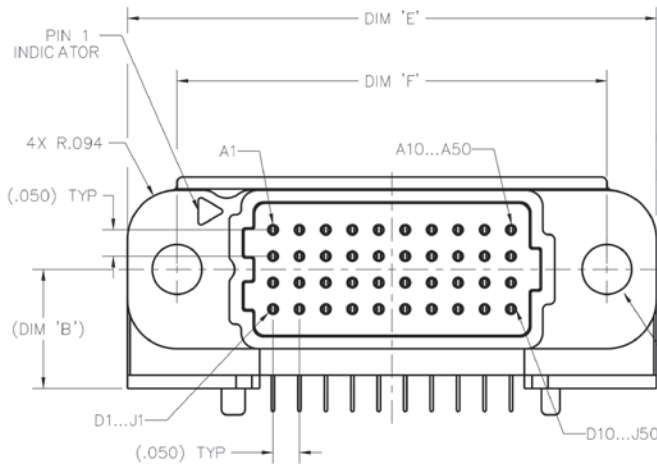




CONNECTOR DIMENSIONS  
(BLANK HARDWARE OPTION SHOWN)

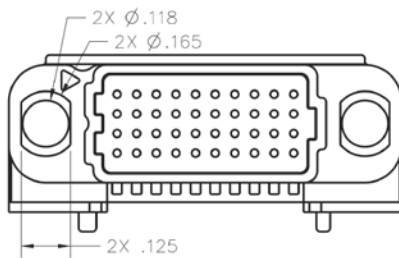


ISOMETRIC VIEW  
FOR REFERENCE ONLY  
(PART NUMBER VSRAM-04-10-50-00 SHOWN)



2X Ø.094  
(BLANK HARDWARE OPTION ONLY)  
SEE HARDWARE OPTION VIEW  
FOR OTHER HARDWARE OPTIONS

HARDWARE OPTION VIEW



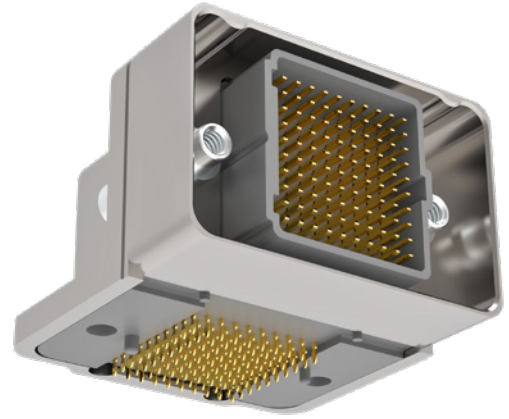
ROWS	DIM 'A'	DIM 'B'	DIM 'C'	DIM 'D'
04	.149	.225	.400	.713
05	.174	.250	.450	.763
06	.199	.275	.500	.813
08	.249	.325	.600	.913
10	.299	.375	.700	1.013

COLUMNS	DIM 'E'	DIM 'F'	DIM 'G'	DIM 'H'
10	1.000	.813	.600	.813
20	1.500	1.313	1.100	1.313
30	2.000	1.813	1.600	1.813
40	2.500	2.313	2.100	2.313
50	3.000	2.813	2.600	2.813

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## VRRAM — Rugged, Right Angle Male

VRRAM signal-integrity connectors are ruggedized versions of the standard VSRAM male connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and performance. Pitch: 1.27 mm.



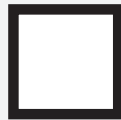
### Sample Part Number Format: VRRAM-04-10-50-02-N



**SERIES**  
Rugged Right Angle  
(Male) 1.27 mm



**ROWS**  
04 – 4 Rows  
05 – 5 Rows  
06 – 6 Rows  
08 – 8 Rows  
10 – 10 Rows



**COLUMNS**  
10 – 10 Columns  
20 – 20 Columns  
30 – 30 Columns  
40 – 40 Columns  
50 – 50 Columns



**CONTACT PLATING**  
50 – 50  $\mu$  Au



**TERMINATION**  
00 – Press-fit  
01 – Paste-in-hole  
02 – PTH 0.078"  
03 – PTH 0.109"  
04 – PTH 0.140"  
05 – PTH 0.156"  
06 – PTH 0.172"



**OPTIONS**  
Blank – Standard  
G – Guide pin  
N – Fixed jacknut  
J – Turning jackscrew<sup>1</sup>  
L – Locking screw<sup>1</sup>  
E – Standard/EMI gasket  
GE – Guide pin/EMI gasket  
NE – Fixed jacknut/EMI gasket  
JE – Turning jackscrew/EMI gasket<sup>1</sup>  
LE – Locking screw/EMI gasket<sup>1</sup>

### Notes:

See AirBorn spec ESL5001 for installation information.

<sup>1</sup> Connectors come pre-assembled with shells & hardware.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Compliant; certificate of conformance available upon request with each shipment.

Please view document VRRAM-XX-XX-XX-XX-XX on [airborn.com](http://airborn.com) before part configuration for more product specification information.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

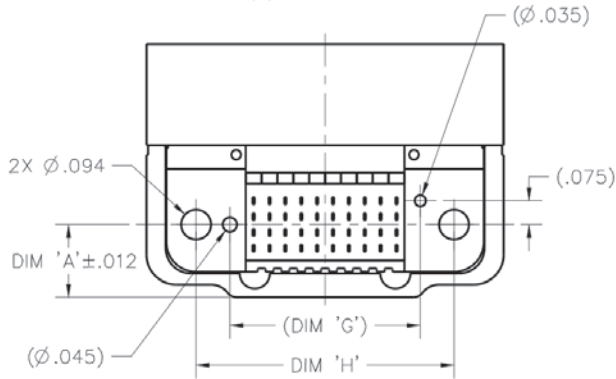
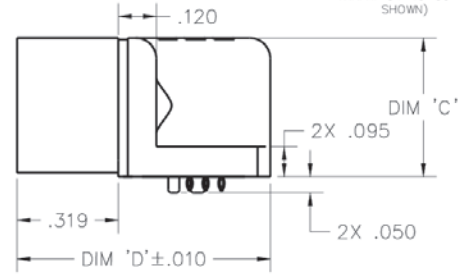
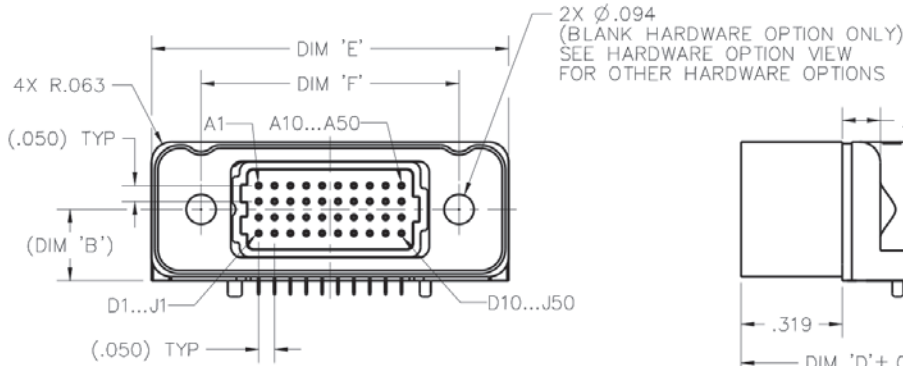
The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



CONNECTOR DIMENSIONS  
(BLANK, G AND N HARDWARE OPTIONS)



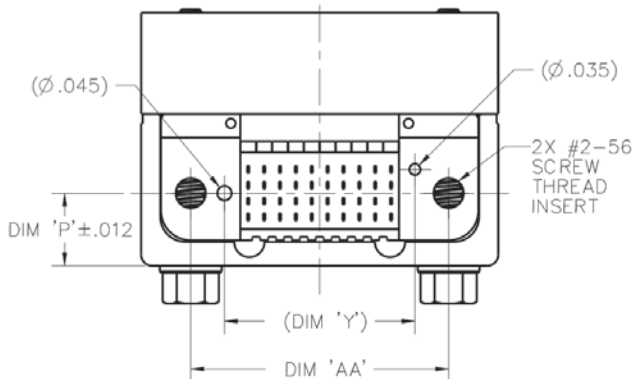
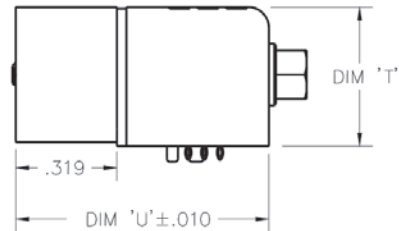
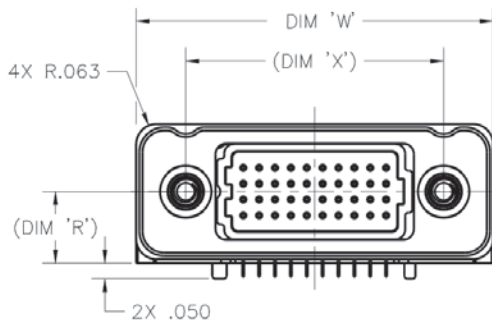
ISOMETRIC VIEW  
FOR REFERENCE ONLY  
(PART NUMBER  
VRRAM-04-10-50-00  
SHOWN)



ROWS	DIM 'A'	DIM 'B'	DIM 'C'	DIM 'D'
04	.229	.225	.437	.798
05	.254	.250	.487	.848
06	.279	.275	.537	.898
08	.329	.325	.637	.998
10	.379	.375	.737	1.098

COLUMNS	DIM 'E'	DIM 'F'	DIM 'G'	DIM 'H'
10	1.125	.813	.600	.813
20	1.625	1.313	1.100	1.313
30	2.125	1.813	1.600	1.813
40	2.625	2.313	2.100	2.313
50	3.125	2.813	2.600	2.813

CONNECTOR DIMENSIONS  
(J & L HARDWARE OPTIONS)



ROWS	DIM 'P'	DIM 'R'	DIM 'T'	DIM 'U'
04	.229	.225	.438	.798
05	.254	.250	.488	.848
06	.279	.275	.538	.898
08	.329	.325	.638	.998
10	.379	.375	.738	1.098

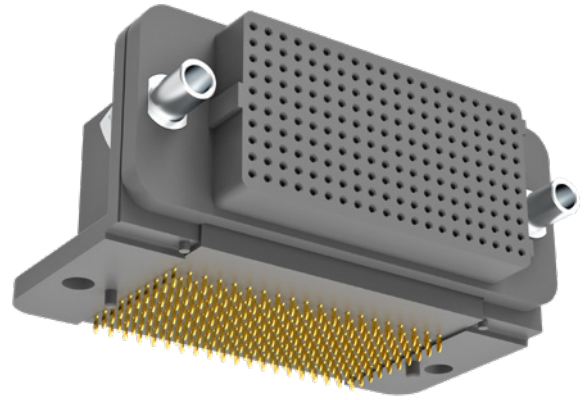
COLUMNS	DIM 'W'	DIM 'X'	DIM 'Y'	DIM 'AA'
10	1.125	.813	.600	.813
20	1.625	1.313	1.100	1.313
30	2.125	1.813	1.600	1.813
40	2.625	2.313	2.100	2.313
50	3.125	2.813	2.600	2.813

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.



## VSRAF — Right Angle Female

VSRAF signal-integrity connectors are used in right angle, PCB-mount applications where a female interface is required. Termination styles include press-fit, paste-in-hole or plated thru-hole. Pitch: 1.27 mm.



### Sample Part Number Format: VSRAF-04-10-50-02-G

<b>VSRAF</b>	-	-	-	<b>50</b>	-	-
<b>SERIES</b> Right Angle (Female) 1.27 mm		<b>ROWS</b> 04 – 4 Rows 05 – 5 Rows 06 – 6 Rows 08 – 8 Rows 10 – 10 Rows	<b>COLUMNS</b> 10 – 10 Columns 20 – 20 Columns 30 – 30 Columns 40 – 40 Columns 50 – 50 Columns	<b>CONTACT PLATING</b> 50 – 50 μ" Au	<b>TERMINATION</b> 00 – Press-fit 01 – Paste-in-hole 02 – PTH 0.078" 03 – PTH 0.109" 04 – PTH 0.140" 05 – PTH 0.156" 06 – PTH 0.172"	<b>OPTIONS</b> Blank – No options* G – Guide socket N – Fixed jacknut J – Turning jackscrew L – Locking screw

#### Notes:

See AirBorn spec ESL5001 for installation information.  
Connector potting is standard.

\* No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Compliant; certificate of conformance available upon request with each shipment.

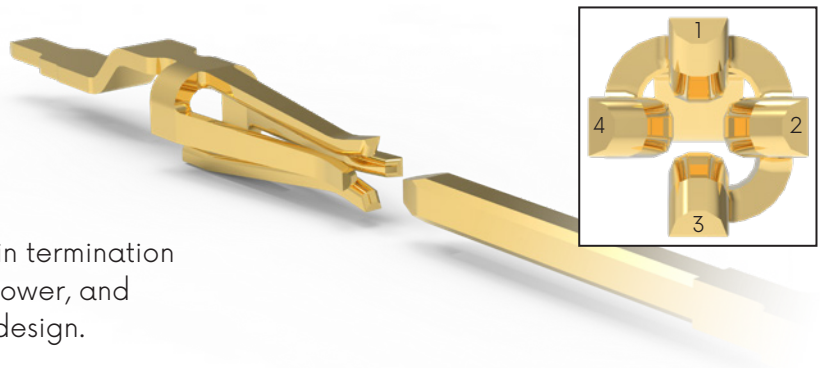
Please view document VSRAF-XX-XX-XX-XX-X on [airborn.com](http://airborn.com) before part configuration for more product specification information.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

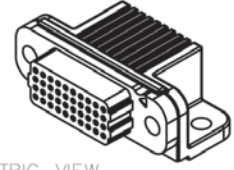
## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

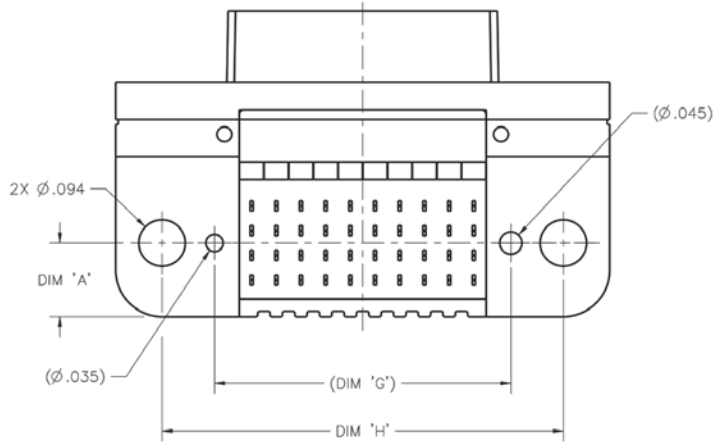
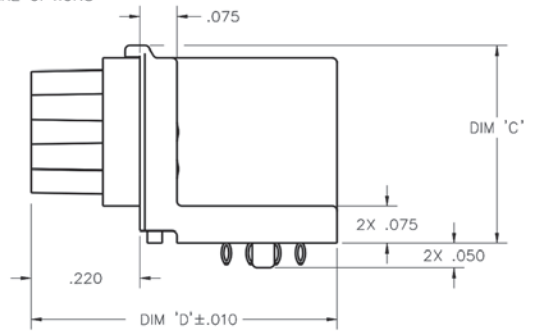
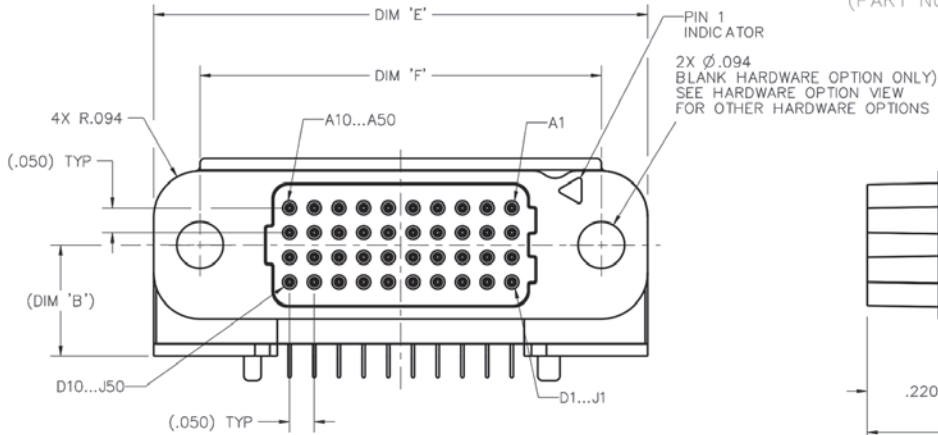
The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



CONNECTOR DIMENSIONS  
(BLANK HARDWARE OPTION SHOWN)



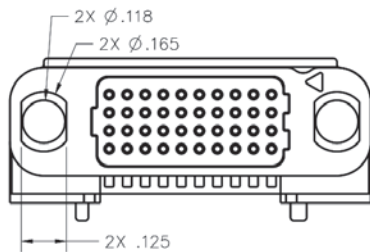
ISOMETRIC VIEW  
FOR REFERENCE ONLY  
(PART NUMBER VSRAF-04-10-50-00 SHOWN)



ROWS	DIM 'A'	DIM 'B'	DIM 'C'	DIM 'D'
04	.149	.225	.400	.619
05	.174	.250	.450	.669
06	.199	.275	.500	.719
08	.249	.325	.600	.819
10	.299	.375	.700	.919

COLUMNS	DIM 'E'	DIM 'F'	DIM 'G'	DIM 'H'
10	1.000	.813	.600	.813
20	1.500	1.313	1.100	1.313
30	2.000	1.813	1.600	1.813
40	2.500	2.313	2.100	2.313
50	3.000	2.813	2.600	2.813

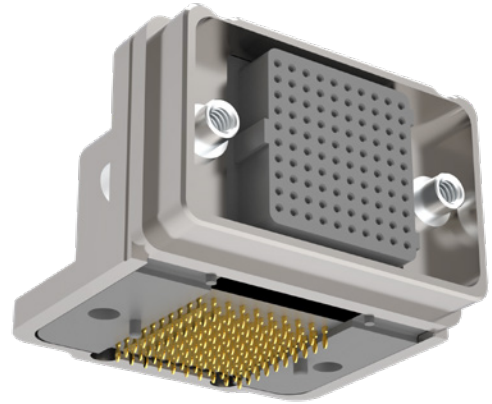
HARDWARE OPTION VIEW



Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## VRRAF — Rugged, Right Angle Female

VRRAF signal-integrity connectors are ruggedized versions of the standard VSRAF female connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and performance. Pitch: 1.27 mm.



### Sample Part Number Format: VRRAF-04-10-50-00-N

**VRRAF**

**SERIES**  
Rugged Right Angle  
(Female) 1.27 mm

[ ]

**ROWS**  
04 – 4 Rows  
05 – 5 Rows  
06 – 6 Rows  
08 – 8 Rows  
10 – 10 Rows

[ ]

**COLUMNS**  
10 – 10 Columns  
20 – 20 Columns  
30 – 30 Columns  
40 – 40 Columns  
50 – 50 Columns

**50**

**CONTACT PLATING**  
50 – 50 μ" Au

[ ]

**TERMINATION**  
00 – Press-fit  
01 – Paste-in-hole  
02 – PTH 0.078"  
03 – PTH 0.109"  
04 – PTH 0.140"  
05 – PTH 0.156"  
06 – PTH 0.172"

[ ]

**OPTIONS**  
Blank – Standard  
G – Guide socket  
N – Fixed jacknut  
J – Turning jackscrew<sup>1</sup>  
L – Locking screw<sup>1</sup>  
E – Standard/EMI gasket  
GE – Guide socket/EMI gasket  
NE – Fixed jacknut/EMI gasket  
JE – Turning jackscrew/EMI gasket<sup>1</sup>  
LE – Locking screw/EMI gasket<sup>1</sup>

### Notes:

See AirBorn spec ESL5001 for installation information.

<sup>1</sup> Connectors come pre-assembled with shells & hardware.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Compliant; certificate of conformance available upon request with each shipment.

Please view document VRRAF-XX-XX-XX-XX-XX on [airborn.com](http://airborn.com) before part configuration for more product specification information.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

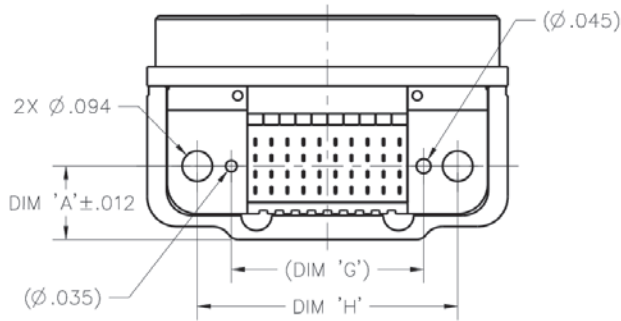
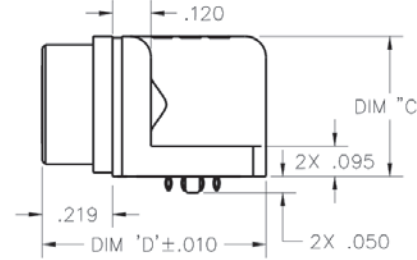
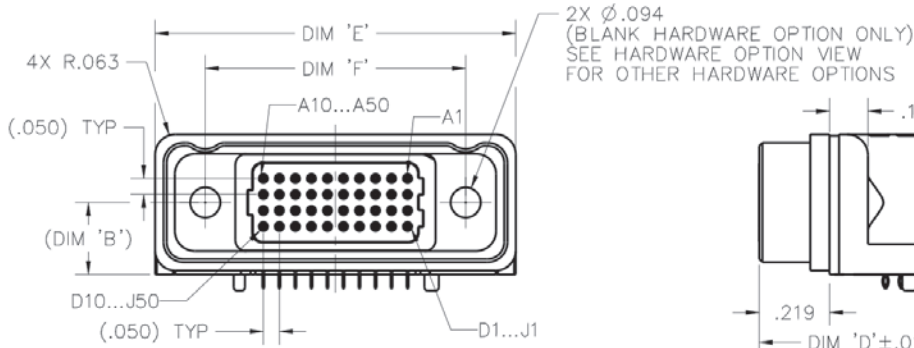




CONNECTOR DIMENSIONS  
(BLANK, G AND N HARDWARE OPTIONS)



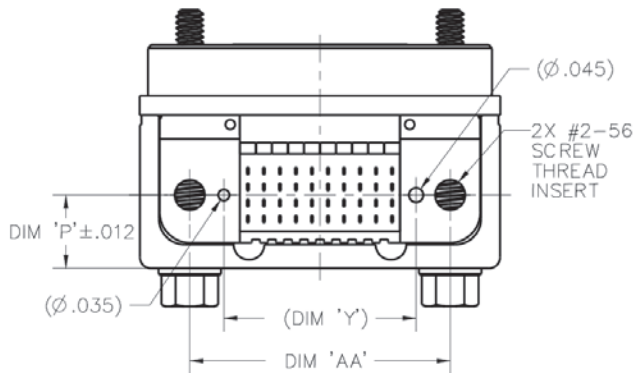
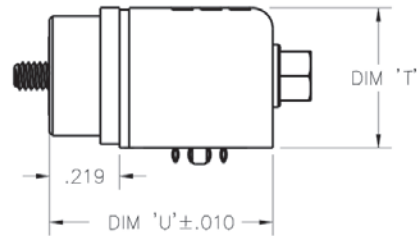
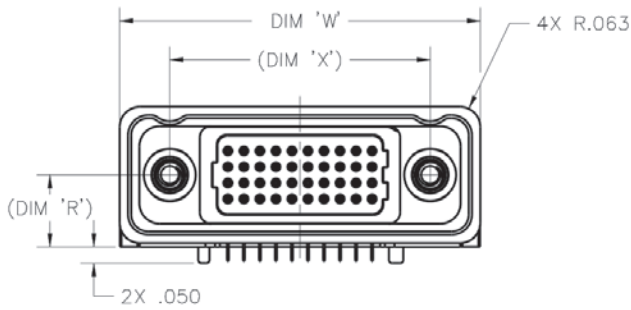
ISOMETRIC VIEW  
FOR REFERENCE ONLY  
(PART NUMBER  
VRRAF-04-10-50-00  
SHOWN)



ROWS	DIM 'A'	DIM 'B'	DIM 'C'	DIM 'D'
04	.229	.225	.437	.698
05	.254	.250	.487	.748
06	.279	.275	.537	.798
08	.329	.325	.637	.898
10	.379	.375	.737	.998

COLUMNS	DIM 'E'	DIM 'F'	DIM 'G'	DIM 'H'
10	1.125	.813	.600	.813
20	1.625	1.313	1.100	1.313
30	2.125	1.813	1.600	1.813
40	2.625	2.313	2.100	2.313
50	3.125	2.813	2.600	2.813

CONNECTOR DIMENSIONS  
(J & L HARDWARE OPTIONS)



ROWS	DIM 'P'	DIM 'R'	DIM 'T'	DIM 'U'
04	.228	.225	.438	.697
05	.253	.250	.488	.747
06	.278	.275	.538	.798
08	.328	.325	.638	.897
10	.378	.375	.738	.997

COLUMNS	DIM 'W'	DIM 'X'	DIM 'Y'	DIM 'AA'
10	1.125	.813	.600	.813
20	1.625	1.313	1.100	1.313
30	2.125	1.813	1.600	1.813
40	2.625	2.313	2.100	2.313
50	3.125	2.813	2.600	2.813

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## VRD — Differential Pair Twinax Cable Assembly

VRD cable assemblies are designed for twinax applications. These cable assemblies come in standard lengths but custom lengths and configurations can also be requested. Ruggedized hoods are standard. Pitch: 1.27 mm.



### Sample Part Number Format: VRD-04-10-50-03J-000-030



**SERIES**  
Differential Pair  
Twinax Cable  
Assembly 1.27 mm

**ROWS**  
04 – 4 Rows  
05 – 5 Rows  
06 – 6 Rows  
08 – 8 Rows  
10 – 10 Rows

**COLUMNS**  
10 – 10 Columns  
20 – 20 Columns  
30 – 30 Columns  
40 – 40 Columns  
50 – 50 Columns

**CONTACT PLATING**  
50 – 50  $\mu$  Au

**CONNECTOR 1**  
01G – Male with guide pins  
01N – Male with threaded nut #2-56  
01L – Male with locking screw #2-56  
01J – Male with jackscrew #2-56  
03G – Female with guide sockets  
03N – Female with threaded nut #2-56  
03L – Female with locking screw #2-56  
03J – Female with jackscrew #2-56

**CONNECTOR 2**  
000 – Flying Leads  
01G – Male with guide pins  
01N – Male with threaded nut #2-56  
01L – Male with locking screw #2-56  
01J – Male with jackscrew #2-56  
03G – Female with guide sockets  
03N – Female with threaded nut #2-56  
03L – Female with locking screw #2-56  
03J – Female with jackscrew #2-56

**LENGTH\***  
030 – 0.30 M  
040 – 0.40 M  
050 – 0.50 M  
060 – 0.60 M  
070 – 0.70 M  
080 – 0.80 M  
090 – 0.90 M  
100 – 1.00 M  
150 – 1.50 M  
200 – 2.00 M  
300 – 3.00 M

### Notes:

See AirBorn spec ESL5001 for installation information.

\*Other cable lengths and configurations available.

AirBorn can manufacture other configurations to your exact specifications.

Reference pinout information on product spec drawing on [www.airborn.com](http://www.airborn.com).

RoHS Compliant; certificate of conformance available upon request with each shipment.

Please view document VRD-XX-XX-XX-XXX-XXX-XXX on [airborn.com](http://airborn.com) before part configuration for more product specification information.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

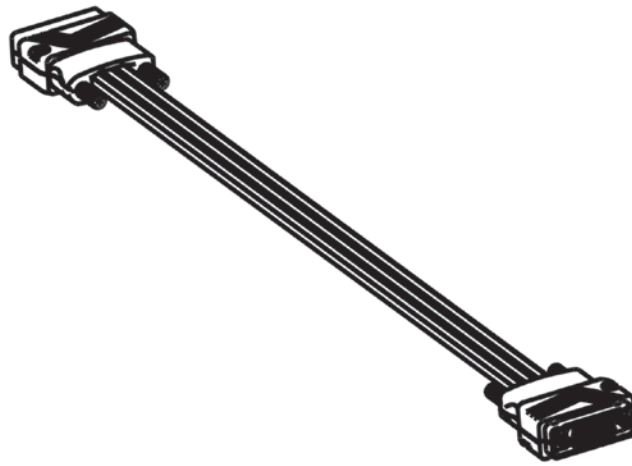
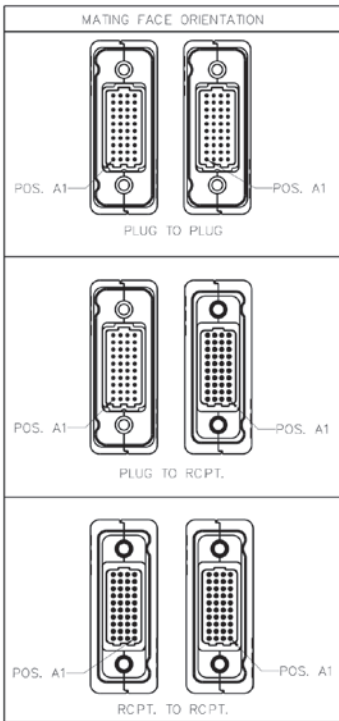
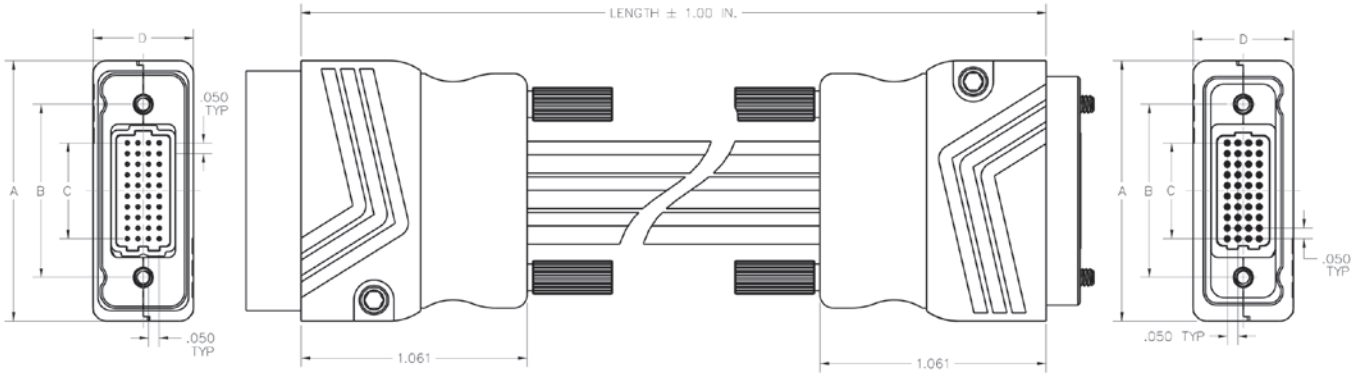
## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



# Dimensions



COLUMNS	A	B	C	ROWS	D
10	1.222	0.813	0.450	4	0.470
20	1.722	1.313	0.950	5	0.520
30	2.222	1.813	1.450	6	0.570
40	2.722	2.313	1.950	8	0.670
50	3.222	2.813	2.450	10	0.770

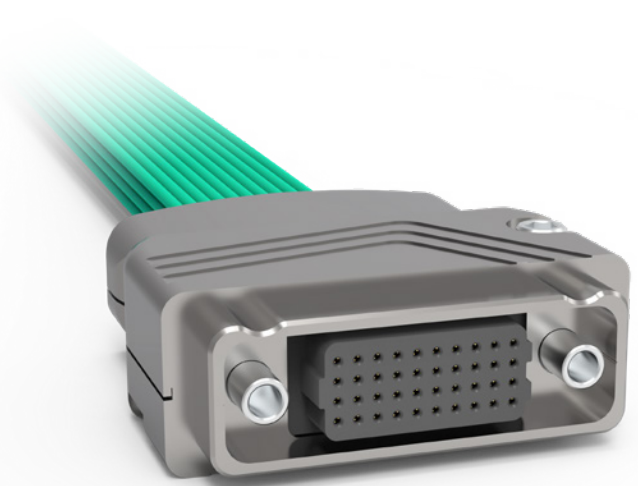
LENGTH		
CODE	LENGH (M)	LENGTH (IN)
030	0.30	11.81
040	0.40	15.75
050	0.50	19.69
060	0.60	23.62
070	0.70	27.56
080	0.80	31.50
090	0.90	35.43
100	1.00	39.37
150	1.50	59.06
200	2.00	78.74
300	3.00	118.11

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.



## VRW — Discrete Wire Cable Assembly With Internal Solder Connection

VRW cable assemblies come in standard wire and lengths but custom wire and length options are available. Ruggedized shells are standard. Pitch: 1.27 mm.



### Sample Part Number Format: VRW-04-10-50-03G-000-A030



**SERIES**  
Discrete Wire  
Cable Assembly  
1.27 mm

**ROWS**  
04 – 4 Rows  
05 – 5 Rows  
06 – 6 Rows  
08 – 8 Rows  
10 – 10 Rows

**COLUMNS**  
10 – 10 Columns  
20 – 20 Columns  
30 – 30 Columns  
40 – 40 Columns  
50 – 50 Columns

**CONTACT PLATING**  
50 – 50  $\mu$  Au

**CONNECTOR 1**  
01G – Male with guide pins  
01N – Male with threaded nut #2-56  
01L – Male with locking screw #2-56  
01J – Male with jackscrew #2-56  
03G – Female with guide sockets  
03N – Female with threaded nut #2-56  
03L – Female with locking screw #2-56  
03J – Female with jackscrew #2-56

**CONNECTOR 2**  
000 – Flying Leads  
01G – Male with guide pins  
01N – Male with threaded nut #2-56  
01L – Male with locking screw #2-56  
01J – Male with jackscrew #2-56  
03G – Female with guide sockets  
03N – Female with threaded nut #2-56  
03L – Female with locking screw #2-56  
03J – Female with jackscrew #2-56

**WIRE CODE**  
XXXX  
(Four characters are required -- see blue columns in the chart below.)

### Notes:

See AirBorn spec ESL5001 for installation information.  
All VRW part numbers are non-RoHS-compliant.  
Wire colors per M83513 are ten (10) solid colors, repeating.  
Per M83513, corrosion has been experienced on connectors that are pre-wired with 22759/33 and stored in sealed environments. Caution should be exercised when using this wire.  
Reference pinout information on product spec drawing on [www.airborn.com](http://www.airborn.com).  
Please view document VRW-XX-XX-XX-XXX-XXX-XXXX on [airborn.com](http://airborn.com) before part configuration for more product specification information.

Color (per 83513) and GAGE		Length		
			Meters	Feet
NEMA HP3 EXBEB (24 AWG) - Multicolored	A			
White	B	010	0.10	0.328
NEMA HP3 EXBDB (26 AWG) - Multicolored	C	020	0.20	0.656
White	D	030	0.30	0.984
NEMA HP3 EXBCB (28 AWG) - Multicolored	E	040	0.40	1.312
White	F	050	0.50	1.640
NEMA HP3 EXBBB (30 AWG) - Multicolored	G	060	0.60	1.969
White	H	070	0.70	2.297
SAE AS22759/33-24 (AWG) - Multicolored	J	080	0.80	2.625
White	K	090	0.90	2.953
SAE AS22759/33-26 (AWG) - Multicolored	L	100	1.00	3.281
White	M	150	1.50	4.921
SAE AS22759/33-28 (AWG) - Multicolored	N	200	2.00	6.562
White	P	300	3.00	9.843
SAE AS22759/33-30 (AWG) - Multicolored	R			
White	S			

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

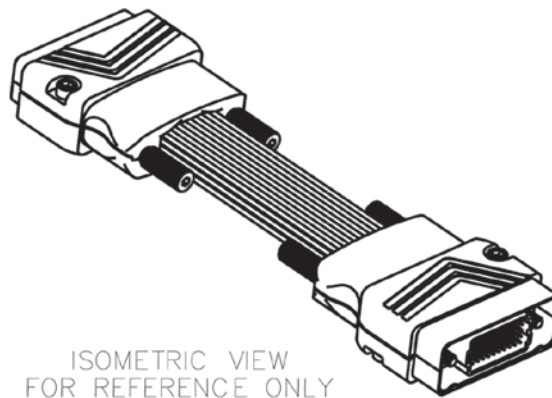
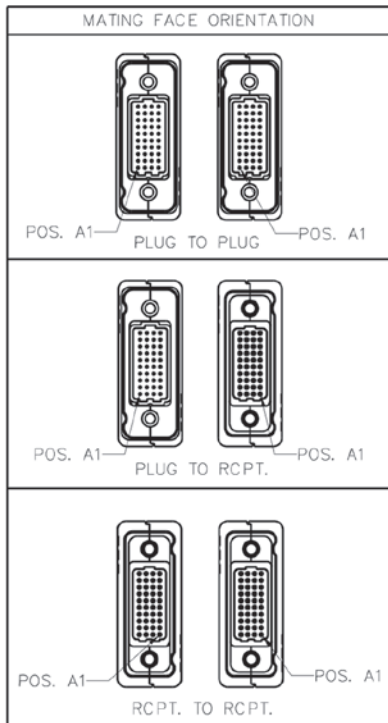
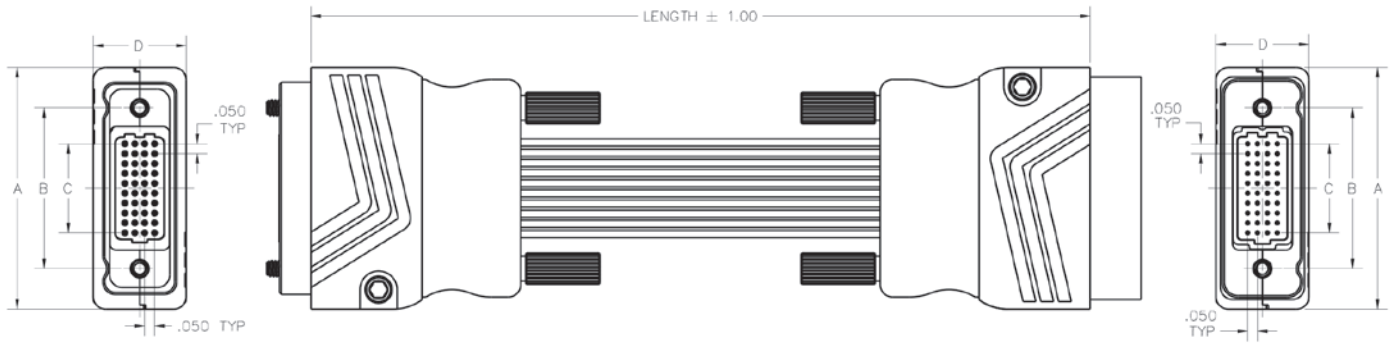
## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



# Dimensions



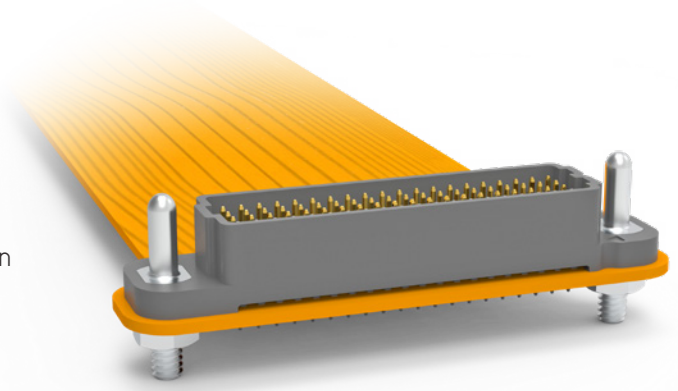
COLUMNS	A	B	C	ROWS	D
10	1.222	0.813	0.450	4	0.470
20	1.722	1.313	0.950	5	0.520
30	2.222	1.813	1.450	6	0.570
40	2.722	2.313	1.950	8	0.670
50	3.222	2.813	2.450	10	0.770

CODE	LENGTH	
	LENGTH (M)	LENGTH (IN)
010	0.10	3.94
020	0.20	7.87
030	0.30	11.81
040	0.40	15.75
050	0.50	19.69
060	0.60	23.62
070	0.70	27.56
080	0.80	31.50
090	0.90	35.43
100	1.00	39.37
150	1.50	59.06
200	2.00	78.74
300	3.00	118.11

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Flexible Circuit Jumper Assemblies

verSI flexible jumper assemblies are available in standard and rugged connector offerings meeting all your application and reliability needs. Standard length offerings are shown but custom length and configuration options are available upon request. Pitch: 1.27 mm.



### Sample Part Number Format: VSX-04-10-01VG-03VG-015



**SERIES**

VSX - Standard  
VRX - Rugged

**ROWS**

04 - 4 Rows  
05 - 5 Rows  
06 - 6 Rows  
08 - 8 Rows  
10 - 10 Rows

**COLUMNS**

10 - 10 Columns  
20 - 20 Columns  
30 - 30 Columns  
40 - 40 Columns  
50 - 50 Columns

**CONNECTOR 1 GENDER & ORIENTATION**

01V - Male  
Vertical  
03V - Female  
Vertical  
01R - Male  
Right Angle  
03R - Female  
Right Angle

**CONNECTOR 1 MATING HARDWARE**

A - No  
Hardware  
J - Jacking  
L - Locking  
N - Jacknut  
G - Guide

**CONNECTOR 2 GENDER & ORIENTATION**

01V - Male  
Vertical  
03V - Female  
Vertical  
01R - Male  
Right Angle  
03R - Female  
Right Angle

**CONNECTOR 2 MATING HARDWARE**

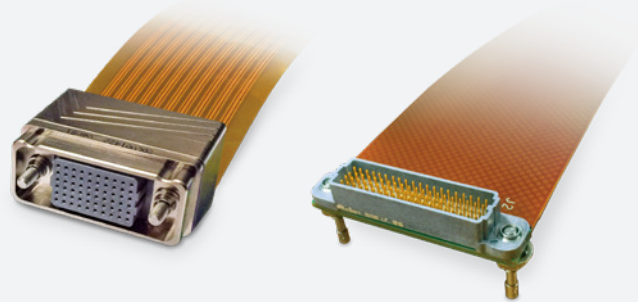
A - No  
Hardware  
J - Jacking  
L - Locking  
N - Jacknut  
G - Guide

**LENGTH**

015 - 0.15 M  
030 - 0.30 M  
040 - 0.40 M  
045 - 0.45 M  
050 - 0.50 M  
060 - 0.60 M  
070 - 0.70 M  
080 - 0.80 M  
090 - 0.90 M  
100 - 1.00 M  
150 - 1.50 M  
200 - 2.00 M  
300 - 3.00 M

**Notes:**

- See AirBorn spec ESL5001 for installation information.
- Same Gender Jumpers (Male to Male and Female to Female) are not wired 1 to 1.
- Connectors are rated for 2 amps, flex traces are rated for 1 amp.
- AirBorn can manufacture other configurations to your exact specifications.
- Please view document VSX-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) before part configuration for more product specification information.

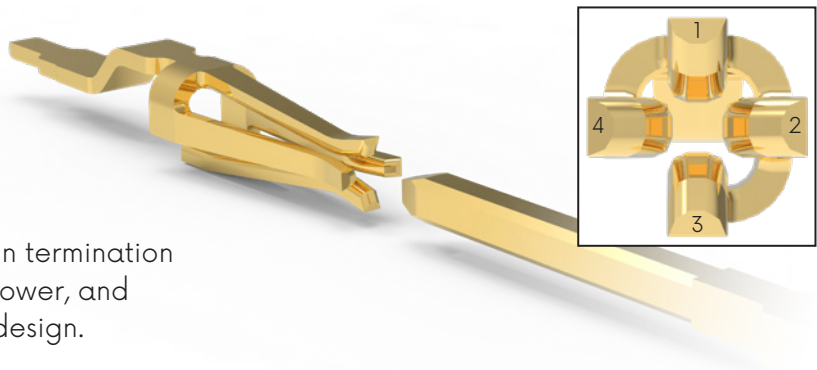


NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

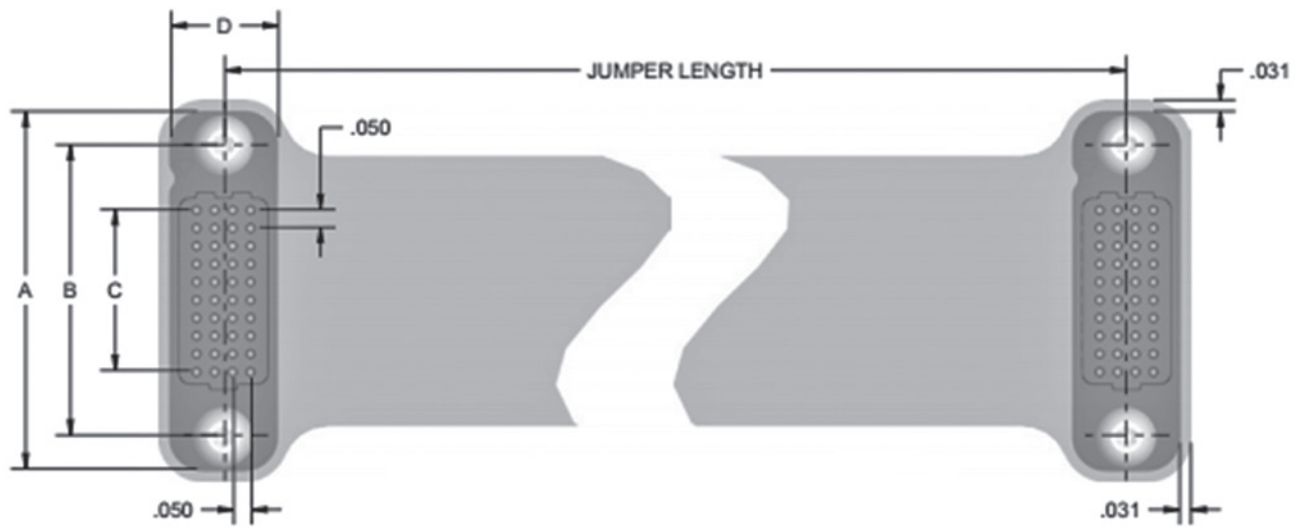
## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.







FLEX JUMPER DIMENSIONS					
Columns	A	B	C	Rows	D
10	1.000	0.813	0.450	4	0.300
20	1.500	1.313	0.950	5	0.350
30	2.000	1.813	1.450	6	0.400
40	2.500	2.313	1.950	8	0.500
50	3.000	2.813	2.450	10	0.700

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## VRCS — Connector Savers

VRCS ruggedized connector savers are designed to protect connectors against repeated mating and unmating cycles during test, initial setup and/or design. VRCS assemblies also serve to protect against costly damage to contacts and hardware during all phases of the connectors life cycle.



### Sample Part Number Format: VRCS-04-10-MJFN



**SERIES**  
Differential Pair Twinax  
Cable Assembly  
1.27 mm



**ROWS**  
04 – 4 Rows  
05 – 5 Rows  
06 – 6 Rows  
08 – 8 Rows  
10 – 10 Rows



**COLUMNS**  
10 – 10 Columns  
20 – 20 Columns  
30 – 30 Columns  
40 – 40 Columns  
50 – 50 Columns



**HARDWARE**  
MJFN – Male with Jackscrew; female jacknut  
MNFJ – Male with Jacknut; female jackscrew  
MLFN – Male with locking screw; female jacknut  
MNFL – Male with Jacknut; locking screw  
MGFG – Male guide pin; female guide socket

### Notes:

See AirBorn spec ESL5001 for installation information.  
VRCS-XX-XX-XXXX hardware is field reversible, replaceable, & repairable.  
Please view document VRCS-XX-XX-XXXX on [airborn.com](http://airborn.com) before part configuration for more product specification information.



NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

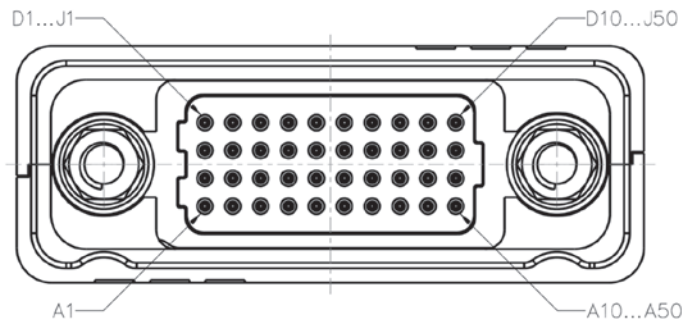
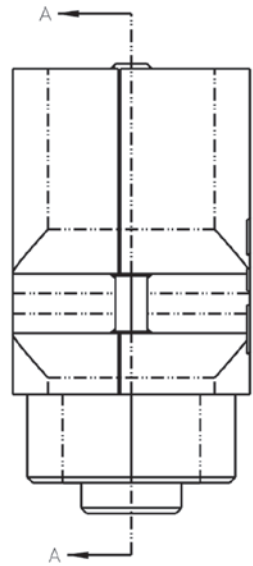
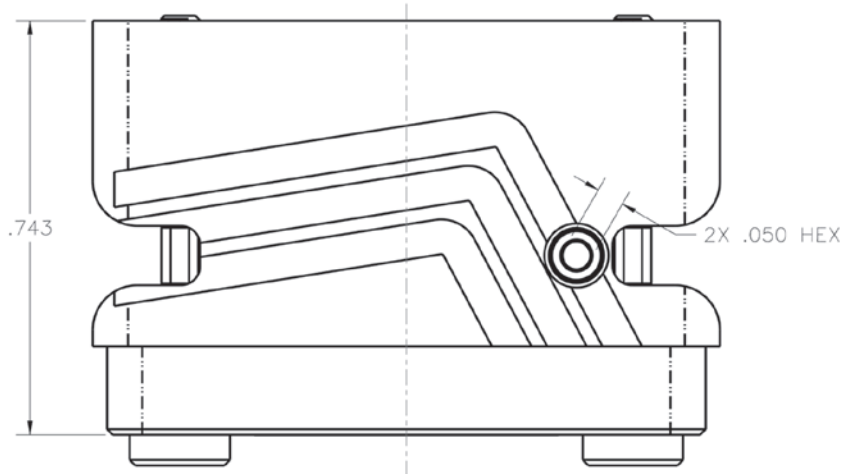
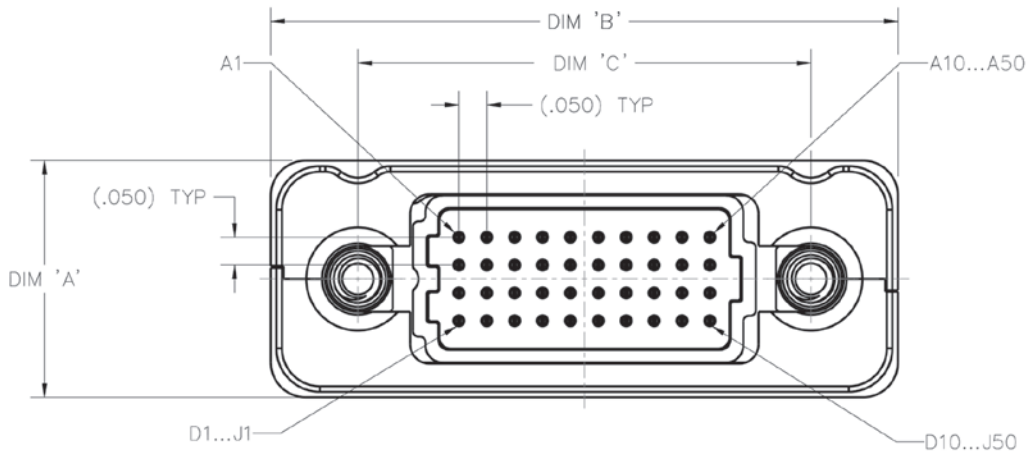
## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



# Dimensions



ROWS	DIM 'A'
04	.425
05	.475
06	.525
08	.625
10	.725

COLUMNS	DIM 'B'	DIM 'C'
10	1.125	.813
20	1.625	1.313
30	2.125	1.813
40	2.625	2.313
50	3.125	2.813

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

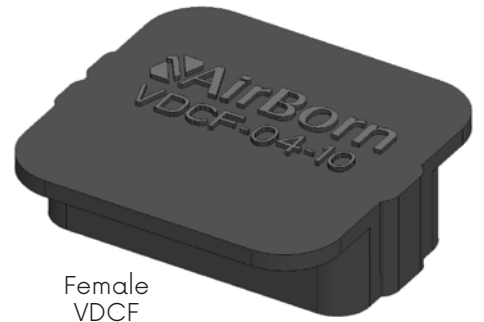


## Dust Covers

VDCM & VDCF dust covers offer connectors protection from environmental and mechanical harm using ESD material.



Male  
VDCM



Female  
VDCF

### Sample Part Number Format: VDCM-04-10



**SERIES**

- VDCM – Male Dust Cover
- VDCF – Female Dust Cover

**ROWS**

- 04 – 4 Rows
- 05 – 5 Rows
- 06 – 6 Rows
- 08 – 8 Rows
- 10 – 10 Rows

**COLUMNS**

- 10 – 10 Columns
- 20 – 20 Columns
- 30 – 30 Columns
- 40 – 40 Columns
- 50 – 50 Columns

*Notes:*

See AirBorn spec ESL5001 for installation information.

VDCM covers are applied to VSM, VRM, VSRAM & VRRAM

VDCF covers are applied to VSF, VRF, VSRAF & VRRAF

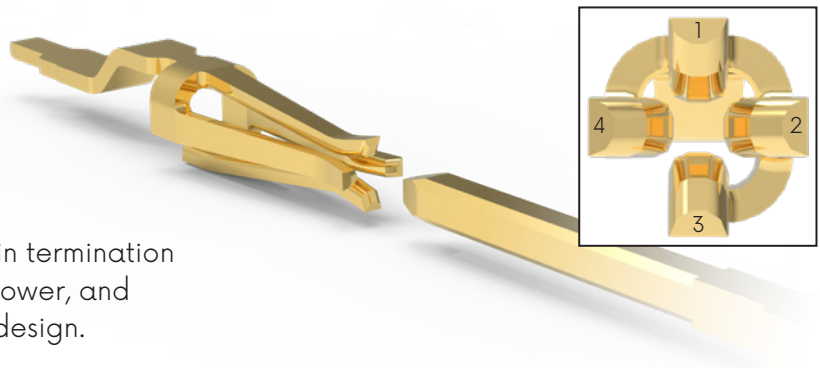
Please view document xxxxxxxxxxxx on [airborn.com](http://airborn.com) before part configuration for more product specification information.

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

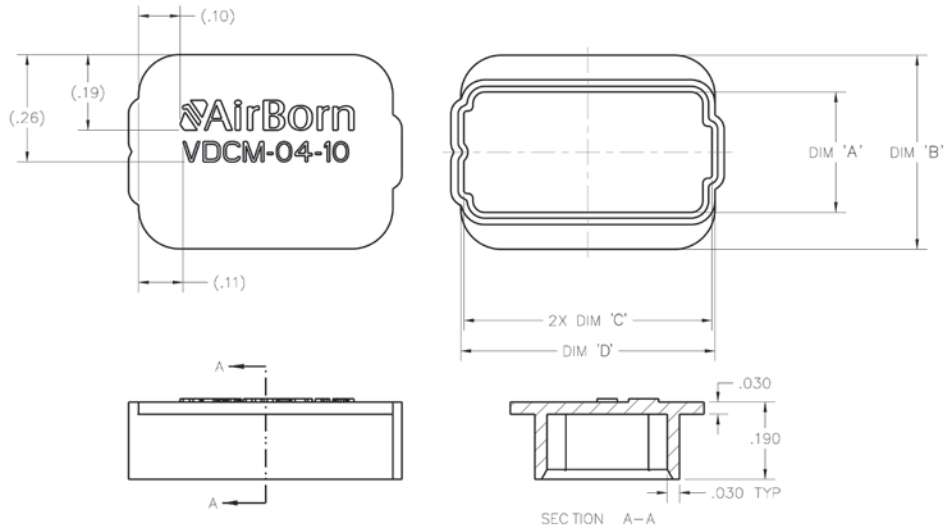
## Reliable Contact Every Time

VerSI connectors feature a low-mating-force, high-reliability contact system with four points-of-contact.

The open-pin field design allows flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



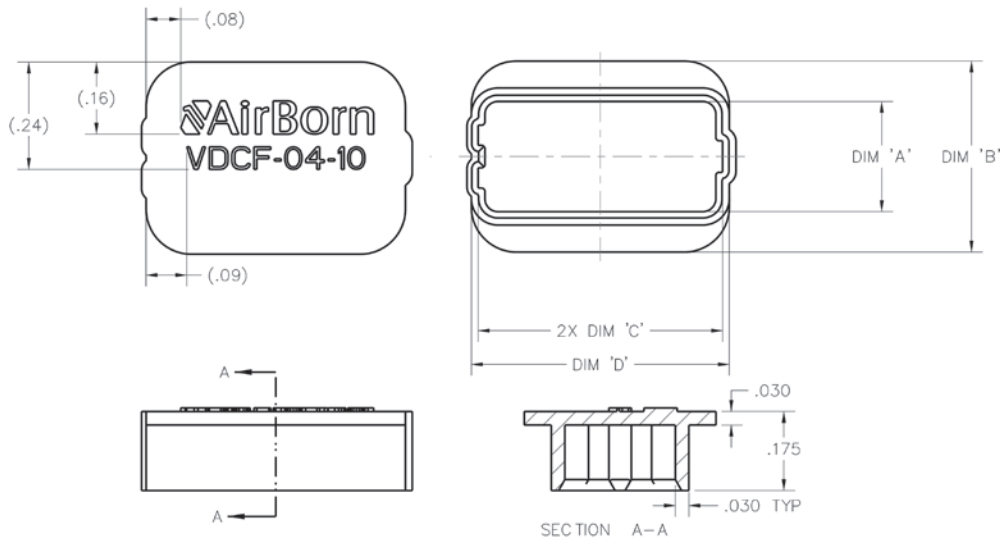
## Dimensions



COLUMNS	DIM 'C'	DIM 'D'
10-10 COL	.611	.63
20-20 COL	1.111	1.13
30-30 COL	1.611	1.63
40-40 COL	2.111	2.13
50-50 COL	2.611	2.63

ROWS	DIM 'A'	DIM 'B'
04-4 ROW	.296	.48
05-5 ROW	.346	.53
06-6 ROW	.396	.58
08-8 ROW	.496	.68
10-10 ROW	.596	.78

VDCM



COLUMNS	DIM 'C'	DIM 'D'
10-10 COL	.545	.58
20-20 COL	1.045	1.08
30-30 COL	1.545	1.58
40-40 COL	2.045	2.08
50-50 COL	2.545	2.57

ROWS	DIM 'A'	DIM 'B'
04-4 ROW	.245	.43
05-5 ROW	.295	.48
06-6 ROW	.345	.53
08-8 ROW	.445	.63
10-10 ROW	.545	.73

VDCF

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Signal Integrity Data — Simulated (Connectors Only)

1	Differential Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Differential Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Differential Impedance	100 ohm $\pm$ 10% @ 50 ps rise time	
4	Differential Skew	< 2 psec	

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.



## V2M Materials, Finishes, & Performance

### Materials & Finishes

- Pin Contacts Materials: . . . . . PIH & PTH: Phos bronze per ASTM B103 or  
 . . . . . Press Fit: BeCu per ASTM B768 (press-fit contact)
- Pin Contacts Finish: . . . . . 50  $\mu$ IN min localized gold finish per ASTM B488 over nickel per ASTM B689 Type I
- Pin Contacts Finish Termination End:  
 PIH & PTH: . . . . . 10  $\mu$ IN min localized gold flash per ASTM B488 Type I code A or C over 50  $\mu$ IN min  
 . . . . . Ni per ASTM B689 Type I  
 Press Fit: . . . . . 50  $\mu$ IN min localized gold per ASTM B488 Type II code C over 50  $\mu$ IN min  
 . . . . . Ni per ASTM B689 Type I  
 SMT non RoHS: . . . . . 10  $\mu$ IN min localized gold flash per ASTM B488 Type I, code A or C over 50  $\mu$ IN min  
 . . . . . Ni per ASTM B689 Type I tin dipped with Sn63Pb37 solder  
 SMT RoHS: . . . . . 10  $\mu$ IN localized gold flash per ASTM B488 Type I, code A or C over 50  $\mu$ IN min  
 . . . . . Ni per ASTM B689 Type I tin dipped with 42Sn/57.6Bi/0.4Ag solder
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Shell Material: . . . . . Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8
- Shell Finish: . . . . . 500  $\mu$ IN min electroless Ni per SAE AMS 2404, Class 3
- Embedment Material: . . . . . Frey Engineering Co. insulating compound CF3003-80 or equivalent
- Hardware Material: . . . . . Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320
- Hardware Finish: . . . . . Passivated per SAE AMS-2700
- Washers Material: . . . . . Stainless steel per NASM35333 (ASTM A240)
- Washers Finish: . . . . . Passivated per NASM35333 (SAE AMS-2700)

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Contact Engagement Force: . . . . . 6.0oz max.\*
- Contact Separation Force: . . . . . 0.5oz min\*
- Connector Mating Force: . . . . . 10oz X (# of contacts), max tested per MIL-DTL-83513
- Connector Unmating Force . . . . . 10oz X (# of contacts), max tested per MIL-DTL-83513
- Low-Level Contact Resistance . . . . . 20m $\Omega$  max, V2M mated to V2F, measured at the termination
- DWV (Sea Level) . . . . . 600 V, RMS, 60Hz, See AirBorn PTB61 for more info
- Recommended Maximum Operating Voltage . . . . . 200 V, RMS, 60Hz, See AirBorn PTB61 for more info
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC
- Durability: . . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . 50 g (EIA-364-27, condition E)
- Outgassing . . . . . Max TML of 1% and max CVCM of .1% per MIL-DTL-83513

\* Forces tested on socket only. Max pin size used for contact engagement force and min pin size used for contact separation force.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

### Materials & Finishes

- Socket Contacts Materials: . . . . . BeCu per ASTM B194
- Socket Contacts Finish Socket End: . . . . . 50 µIN min localized gold finish per ASTM B488 Type II, code C  
. . . . . over 50 µIN min Ni per ASTM B689 Type I
- Socket Contacts Finish Termination End:  
PIH & PTH: . . . . . 10 µIN min localized gold flash per ASTM B488 Type I code A or C over 50 µIN min  
. . . . . Ni per ASTM B689 Type I  
Press Fit: . . . . . 50 µIN min localized gold per ASTM B488 Type II code C over 50 µIN min  
. . . . . Ni per ASTM B689 Type I  
SMT non RoHS: . . . . . 10 µIN min localized gold flash per ASTM B488 Type I, code A or C over 50 µIN min  
. . . . . Ni per ASTM B689 Type I tin dipped with Sn63Pb37 solder  
SMT RoHS: . . . . . 10 µIN localized gold flash per ASTM B488 Type I, code A or C over 50 µIN min  
. . . . . Ni per ASTM B689 Type I tin dipped with 42Sn/57.6Bi/0.4Ag solder
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Shell Material: . . . . . Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8
- Shell Finish: . . . . . 500 µIN min electroless Ni per SAE AMS 2404, Class 3
- Embedment Material: . . . . . Frey Engineering Co. insulating compound CF3003-80 or equivalent
- Hardware Material: . . . . . Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320
- Hardware Finish: . . . . . Passivated per SAE AMS-2700
- Washers Material: . . . . . Stainless steel per NASM35333 (ASTM A240)
- Washers Finish: . . . . . Passivated per NASM35333 (SAE AMS-2700)

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Contact Engagement Force: . . . . . 6.0oz max.\*
- Contact Separation Force: . . . . . 0.5oz min\*
- Connector Mating Force: . . . . . 10oz X (# of contacts), max tested per MIL-DTL-83513
- Connector Unmating Force . . . . . 10oz X (# of contacts), max tested per MIL-DTL-83513
- Low-Level Contact Resistance . . . . . 30mΩ max, V2M mated to V2F, measured at the termination
- DWV (Sea Level) . . . . . 600 V, RMS, 60Hz, See AirBorn PTB61 for more info
- Recommended Maximum Operating Voltage . . . . . 200 V, RMS, 60Hz, See AirBorn PTB61 for more info
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC, tested per MIL-DTL-83513
- Durability: . . . . . 2,500 connector mating cycles, exceeds MIL-DTL-83513
- Sinusoidal Vibration: . . . . . .20 g tested per MIL-DTL-83513
- Shock: . . . . . .50 g tested per MIL-DTL-83513
- Outgassing . . . . . Max TML of 1% and max CVCM of .1% per MIL-DTL-83513

\* Forces tested on socket only. Max pin size used for contact engagement force and min pin size used for contact separation force.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## V2C Materials, Finishes, & Performance

### Materials & Finishes

- Shell Material: . . . . . 6061-T6, 6061-T6511 or 6060-T6511 Aluminum SAE AMS 4027 or SAE AMS-QQ-A-200/8
- Shell Finish: . . . . . 500 microinch min electroless Ni per SAE AMS-2404, class3
- Socket Material: . . . . . BeCu per ASTM B194
- Pin Material: . . . . . Phos bronze per ASTM B103
- Contact Finish: . . . 50 microinch min gold finish per SAE AMS B488 over 50 microinch NI per ASTM B689 Type I
- Cable: . . . . . Reference product specification drawing V2C-XX-XX-XX-XXX-XXX-XXX-XXX
- Wire: . . . . . Reference product specification drawing V2C-XX-XX-XX-XXX-XXX-XXX-XXX
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Hardware Materials: . . . . . Stainless steel per ASTM A582/A582M or ASTM A320
- Hardware Finishes: . . . . . Passivated per SAE AMS-2700
- Embedment. . . . . Frey Engineering Co. insulating compound CF3003-80 & L-11-49 or equivalent
- Solder: . . . . . SN/PB solder, 63% PB, 37% SN
- EMI Gasket: . . . . . Conductive elastomer per MIL-DTL-83528 Type D

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Contact Engagement Force: . . . . . 6.0oz max.\*
- Contact Separation Force: . . . . . 0.5oz min\*
- Connector Mating Force: . . . . . 10oz X (# of contacts), max tested per MIL-DTL-83513
- Connector Unmating Force . . . . . 10oz X (# of contacts), max tested per MIL-DTL-83513
- DWV (Sea Level) . . . . . 600 V, RMS, 60Hz, See AirBorn PTB61 for more info
- Recommended Maximum Operating Voltage . . . . . 200 V, RMS, 60Hz, See AirBorn PTB61 for more info
- Insulation Resistance: . . . . . .5,000 megaohms minimum @ 500 VDC per MIL-DTL-83513
- Durability: . . . . . 2,500 connector mating cycles, exceeding MIL-DTL-83513
- Sinusoidal Vibration: . . . . . .20 g tested per MIL-DTL-83513
- Shock: . . . . . .50 g tested per MIL-DTL-83513
- Outgassing . . . . . Max TML of 1% and max CVCM of .1% per MIL-DTL-83513

\* Forces tested on socket only. Max pin size used for contact engagement force and min pin size used for contact separation force.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

### Materials & Finishes

- Pin Contacts: . . . . . Phos bronze per ASTM B103 or BeCu per ASTM B768 (press-fit contact)
- Contact Finish: . . . . . Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 μIN min
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320  
. . . . . passivated per SAE AMS-2700
- Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
- Solder Paste: . . . . . Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520))

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Max. Recommended Operating Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC
- Durability: . . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . 50 g (EIA-364-27, condition E)

NOTE: Performance values are estimates & values are subject to change without notice. Please reference engineering document VSM-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest specifications to design against. Certificate of RoHS compliance available upon request with each shipment.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.



## VSF Materials, Finishes, & Performance

### Materials & Finishes

- Socket Contacts: . . . . . BeCu per ASTM B194
- Contact Finish: . . . . . Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 μIN min
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320  
. . . . . passivated per SAE AMS-2700
- Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
- Solder Paste: . . . . . Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Max. Recommended Operating Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC
- Durability: . . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . 50 g (EIA-364-27, condition E)

NOTE: Performance values are estimates & values are subject to change without notice. Please reference engineering document VSF-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest engineering to design against. Certificate of RoHS compliance available upon request with each shipment.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

### Materials & Finishes

- Shell: . . . . . Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8
- Finish: . . . . . Electroless nickel per SAE AMS 2404, Class 3; 500 μIN min
- Pin Contacts: . . . . . Phos bronze per ASTM B103 or BeCu per ASTM B768 (press-fit contact)
- Contact Finish: . . . . . Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 μIN min
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): . . . . Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320; . . . . . passivated per SAE AMS-2700
- Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
- Solder Paste: . . . . . Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Max. Recommended Operating Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC
- Durability: . . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . 50 g (EIA-364-27, condition E)

NOTE: Performance values are estimates & values are subject to change without notice. Please reference engineering document VRM-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest specifications to design against. Certificate of RoHS compliance available upon request with each shipment.

\*VRM 8MM (VRM-XX-XX-080) spacing is not available with mating hardware options.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## VRF Materials, Finishes, & Performance

### Materials & Finishes

- Shell: . . . . . Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8
- Finish: . . . . . Electroless nickel per SAE AMS-2404, Class 3; 500 μIN min
- Socket Contact: . . . . . BeCu per ASTM B194
- Contact Finish: . . . . . Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 μIN min
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; . . . . . passivated per SAE AMS-2700
- Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
- EMI Gasket (GE, G1E, NE and N1E options only):. . . . . Conductive Elastomer per MIL-DTL-83528 Type D
- Solder Paste: . . . . . Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Max. Recommended Operating Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC
- Durability:. . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock:. . . . . 50 g (EIA-364-27, condition E)

NOTE: Performance values are estimates & values are subject to change without notice. Please reference engineering document VRF-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest specifications to design against. Certificate of RoHS compliance available upon request with each shipment.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

### Materials & Finishes

- Pin Contacts (Mating Face): . . . . . Phos bronze per ASTM B103
- Pin Contacts (Termination): .BeCu per ASTM B768 (press-fit contact) or brass alloy per ASTM B36 (PIH or PTH)
- Contact Finish (Mating Face): . . . . . Localized gold finish per ASTM B488, Type II, Code C over nickel per . . . . . ASTM B689 Type I, 50 μIN min
- Contact Finish (Termination): . . . . . Localized gold finish per ASTM B488, Type II, Code C, 50 μIN min over . . . . . nickel per ASTM B689 Type I, 50 μIN min (Press Fit) or Localized Gold per ASTM B488 Type I, Code A . . . . . or C, 10-25 μIN over nickel per ASTM B689 Type I, 50 μIN min (PIH or PTH)
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, A582/A582M, or ASTM A320; . . . . . passivated per SAE AMS-2700
- Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Max. Recommended Operating Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC
- Durability: . . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . 50 g (EIA-364-27, condition E)

NOTE: Performance values are estimates & values are subject to change without notice. Please reference engineering document VSRAM-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest specifications to design against. Certificate of RoHS compliance available upon request with each shipment.

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## VRRAM Materials, Finishes, & Performance

### Materials & Finishes

- Shell: . . . . . Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8
- Finish: . . . . . Electroless nickel per SAE AMS-2404, Class 3, 500 µIN min
- Pin Contacts (Mating Face): . . . . . Phos bronze per ASTM B103
- Pin Contacts (Termination): BeCu per ASTM B768 (press-fit contact) or brass alloy per ASTM B36 (PIH or PTH)
- Contact Finish (Mating Face): . . . . . Localized gold finish per ASTM B488, Type II, Code C, over nickel per . . . . . ASTM B689 Type I 50 µIN min
- Contact Finish (Termination Face): . . . . . Localized gold finish per ASTM B488, Type II, Code C, 50 µIN min . . . . . over nickel per ASTM B689 Type I, 50 µIN min (Press Fit) or Localized Gold per ASTM B488, Type I, . . . . . Code A or C, 10-25 µIN over nickel per ASTM B689 Type I, 50 µIN min (PIH or PTH)
- Molded Insulators: . . . . . filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, A582/A582M, or ASTM A320; . . . . . passivated per SAE AMS-2700
- Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Max. Recommended Operating Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC
- Durability: . . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . .50 g (EIA-364-27, condition E)

NOTE: Performance values are estimates & values are subject to change without notice. Please reference engineering document VRRAM-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest specifications to design against. Certificate of RoHS compliance available upon request with each shipment.

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### Materials & Finishes

- Socket Contact (Mating Face): . . . . . per ASTM B194
- Socket Contact (Termination): . . . . . Brass alloy per ASTM B36 (PIH or PTH) or BeCu per . . . . . ASTM B768 (press-fit contact)
- Contact Finish (Mating Face): . . . . . Localized gold finish per ASTM B488, Type II, Code C over nickel per . . . . . ASTM B689 Type I, 50 μIN min
- Contact Finish (Termination): . . . . . Localized gold finish per ASTM B488, Type II, Code C, 50 μIN min over . . . . . nickel per ASTM B689 Type I, 50 μIN min (Press Fit) or localized gold per ASTM B488, . . . . . Type I, Code A or C, 10-25 μIN over nickel per ASTM B689 Type I, 50 μIN min (PIH or PTH)
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; . . . . . passivated per SAE AMS-2700
- Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Max. Recommended Operating Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megohms minimum @ 500 VDC
- Durability: . . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . 50 g (EIA-364-27, condition E)

NOTE: Performance values are estimates & values are subject to change without notice. Please reference engineering document VSM-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest specifications to design against. Certificate of RoHS compliance available upon request with each shipment.

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## VRRAF Materials, Finishes, & Performance

### Materials & Finishes

- Shell: . . . . . Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8
- Finish: . . . . . Electroless nickel per AMS-2404, Class 3; 500 µIN min
- Socket Contact (Mating Face):. . . . . BeCu per ASTM B194
- Socket Contact (Termination): . . . . . Brass alloy per ASTM B36 (PIH or PTH) or BeCu  
. . . . . per ASTM B768 (press-fit contact)
- Contact Finish (Mating Face): . . . . . Localized gold finish per ASTM B488 , Type II, Code C over nickel per  
. . . . . ASTM B689, Type I, 50 µIN min
- Contact Finish (Termination): . . . . . Localized gold finish per ASTM B488, Type II, Code C, 50 µIN min  
. . . . . over nickel per ASTM B689, Type I, 50 µIN min (Press Fit) or localized gold per ASTM B488, Type I,  
. . . . . Code A or C, 10-25 µIN over nickel per ASTM B689 Type I, 50 µIN min (PIH or PTH)
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320;  
. . . . . passivated per SAE AMS-2700
- Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
- EMI Gasket (GE and NE options only): . . . . . Conductive Elastomer per MIL-DTL-83528 Type D

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Max. Recommended Operating Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC
- Durability:. . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . .50 g (EIA-364-27, condition E)

NOTE: Performance values are estimates & values are subject to change without notice. Please reference engineering document VRRAF-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest specifications to design against. Certificate of RoHS compliance available upon request with each shipment.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

### Materials & Finishes

- Shell: . . . . . Aluminum alloy 6061-T6 per QQ-A-250/11 or 6061-T6511 per QQ-A-200/8
- Finish: . . . . . Electroless nickel per SAE AMS-C-26074, Grade B, Class 3
- Socket Contact: . . . . . BeCu per ASTM B194
- Pin Contacts: . . . . . Phos bronze per ASTM B103
- Contact Finish: . . . . . Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I
- Wire: . . . . . 30 AWG\*; 19/42 silver-plated copper
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Hardware: . . . . . Stainless steel per ASTM A582/A582M or ASTM A320; passivated per SAE AMS-2700
- Embedment: . . . . . Frey Eng. Co. insulating compound CF3003-80 and L-II-49 or equivalent

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Max. Recommended Operating Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC
- Durability: . . . . . 2,500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . .50 g (EIA-364-27, condition E)

NOTE: Performance values are estimates & values are subject to change without notice. Please reference engineering document VRD-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest specifications to design against. Certificate of RoHS compliance available upon request with each shipment.

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## VRW Materials, Finishes, & Performance

### Materials & Finishes

- Shell: . . . . . Aluminum alloy 6061-T6 per QQ-A-250/11 or 6061-T6511 per QQ-A-200/8
- Finish . . . . . Electro-less nickel per SAE AMS-2404, Class 3; 500 μ", min.
- Socket Contact: . . . . . BeCu per ASTM B194
- Pin Contacts: . . . . . Phos bronze per ASTM B103 or per BeCu ASTM B768
- Contact Finish: . . . . . Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I
- Molded Insulators . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Embedment: . . . . . Frey Eng. Co. insulating compound CF3003-80 and L-II-49 or equivalent
- Hardware: . . . . . Stainless steel per ASTM A582/A582M or ASTM A320; passivated per SAE AMS-2700

Please reference engineering document VRW-XX-XX-XXX-XX-XX-XX on [airborn.com](http://airborn.com) for the latest engineering specifications to design against.

### Performance

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° to +125° C
- Contact Engagement Force: . . . . . 6.0oz max.\*
- Contact Separation Force: . . . . . 0.5oz min\*
- Connector Mating Force: . . . . . 10oz X (# of contacts), max tested per MIL-DTL-83513
- Connector Unmating Force . . . . . 10oz X (# of contacts), max tested per MIL-DTL-83513
- DWV (Sea Level) . . . . . 600 V, RMS, 60Hz, See AirBorn PTB61 for more info
- Recommended Maximum Operating Voltage . . . . . 200 V, RMS, 60Hz, See AirBorn PTB61 for more info
- Insulation Resistance: . . . . . .5,000 megaohms minimum @ 500 VDC per MIL-DTL-83513
- Durability: . . . . . 2,500 connector mating cycles, exceeding MIL-DTL-83513
- Sinusoidal Vibration: . . . . . .20 g tested per MIL-DTL-83513
- Shock: . . . . . .50 g tested per MIL-DTL-83513
- Outgassing . . . . . Max TML of 1% and max CVCM of .1% per MIL-DTL-83513

\* Forces tested on socket only. Max pin size used for contact engagement force and min pin size used for contact separation force.

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# The AirBorn Advantage

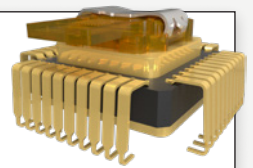
Model-To-Market Solutions



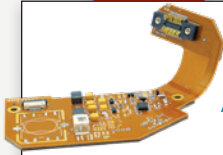
Rugged Power Systems



Photonics/Optoelectronics



Flexible Circuit Assemblies



Cable Assemblies



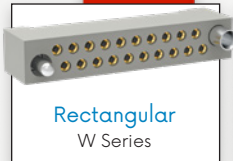
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Active Optical Assemblies



Rectangular W Series



Rectangular R Series



Micro D M Series



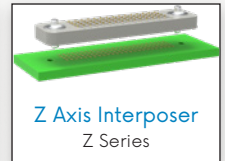
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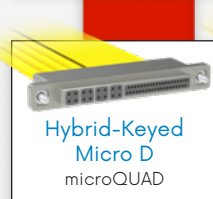
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Z Axis Interposer Z Series



Hybrid-Keyed Micro D microQUAD



High-Speed Micro D microSI



Stackable RC & RCII Series



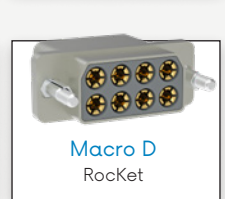
Circular Series 360



Strip Connector AirStrip



Macro D RockKet



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