



## More Voltage & Power

Interconnect Solutions for Electrification





Table of Contents

**About**

Why High Voltage..... 3

Applications..... 4

Contacts ..... 5

Contact Heat Rise Data..... 6

**Connectors**

Circular Connectors and Derivatives.. 7

High Voltage 38999 ..... 8

HV38999- How to Order ..... 9

HV38999- How to Order- Receptacle 10

Bayonet Connectors..... 11

Busbars Solutions..... 12

Voltarius..... 13

Voltarius Plug- How to Order ..... 15

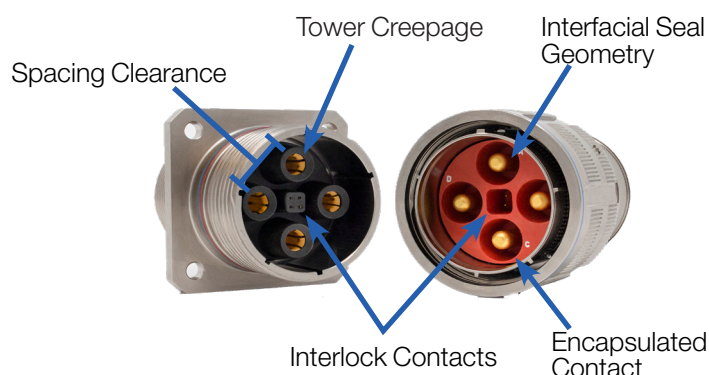
Voltarius Receptacle- How to Order... 16

The world is gradually moving toward the electrification of everything. Consumer electric vehicles (EVs) have already made consistent progress toward mainstream adoption throughout the 2010s, while hybrid/electric military vehicles and electric vertical take-off and landing aircraft (eVTOL) are moving through development and inching toward common use. Homes, businesses, and buildings are seeing a rapid increase in the need for additional electric power, and the power grid is steadily being cycled off fossil fuels in favor of renewable energy.

These requirements will be especially apparent with eVTOL applications, for instance, which are slated to debut in major cities around the world this decade. eVTOLs are more power-hungry than their EV counterparts, with the nascent industry seeking batteries with double the standard energy density (450 watt-hours per kilogram). Meanwhile, the military is seeking an electric version of the Joint Light Tactical Vehicle (JLTV) — its 11-ton replacement of the Humvee that will have extensive power requirements of its own if adapted to an electric powertrain — and anticipates fielding fleets of electric vehicles in the future. Manufacturers require durable interconnect systems capable of handling these heavy power outputs.

From a technical perspective, to increase power output and meet growing industry goals, either the system voltage or current must be increased. Our contact technologies have been optimized over the years to raise current capacity while maintaining conductor size. However, until recently voltage requirements have remained relatively steady. Material and geometric enhancements have allowed us to safely expand the voltage capabilities of our connectors, even at altitude, while continuing to offer the robust use-life required for essential electrical systems. These improvements help to drive available power higher while avoiding significant increases in the weight and size of electrical systems.

In addition, design considerations have been made to accommodate power systems running at high frequencies and with large current excursions even at high operating temperatures. The potential of partial discharge has been mitigated through the use of sealing techniques as well as geometry enhancements to both insulators and conductors. Further improvements to discharge performance can be made through the full optimization of wire termination within the Amphenol family.



## HIGH VOLTAGE 38999



## TRADITIONAL 38999

Amphenol's selection of high-power and high-voltage connectors has been designed to meet the power demands of electric military vehicles, eVTOL aircraft, and that of an all-electric world head-on. We offer high-power and high-voltage connectors with our unique power-handling technologies based around a variety of specifications, including MIL-DTL-38999, MIL-DTL-5015, MGT-5015, and more.

# APPLICATIONS



This collection of electric interconnects and contacts are designed for use in a variety of high-voltage and high-current applications, including:

- Hybrid/electric military vehicles
- Electric vertical takeoff and landing (eVTOL) aircraft
- Next-generation electric commercial aircraft, including business and regional jets
- Drones and UAVs
- Radar/surveillance systems
- Naval systems
- Laser power systems
- Spacecraft

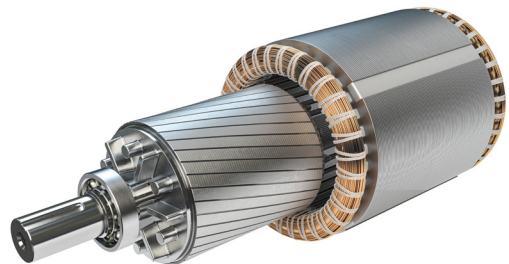
## SYSTEMS/COMPONENTS:

Energy storage, propulsion systems (primary power):

- Batteries
- Generators
- Power distribution units (PDU)
- Inverters
- Rectifiers
- Motors

Control surfaces, avionics, navigational equipment, environmental controls, in-flight entertainment (secondary power):

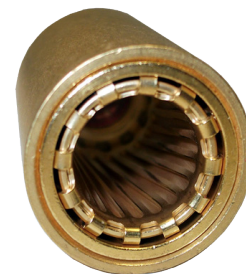
- Converters
- Inverters
- Actuators
- Power distribution units (PDU)





Amphenol offers a selection of contacts in a variety of sizes utilizing proprietary technologies to facilitate greater current carrying capacity and the ability to withstand the intense temperatures of high-amp applications. All power contacts leverage the high conductivity alloys and precision machining advancements incorporated initially in the Amphenol High Current Pin Contacts. These optimizations reduce power loss in your application and can improve ampacity by 15-25% through efficiency gains.

- Available with gold or silver plating
- Alternate termination types such as busbar and male/female threaded available for many connector types
- Optional touch proof tips provide an IP2X rating promoting operator safety for applicable connector series
- Crimp contacts optimized to accept an expanded range of wire diameters and types



### RADSOK SOCKET CONTACT

RADSOK® contacts can handle up to 250 amps at size-0 contacts compared to 150 amps for size-0 mil-spec type standard sockets. RADSOK contacts also feature exceptionally high mating cycle durability and can withstand 20,000 mating cycles with standard silver plating. RADSOK contacts feature a geometric design that ensures a larger distribution of normal forces across the mating pin. These are ideal for high-amperage applications and are already available throughout the Amphenol product line for industrial, automotive, medical, and other industries.

- Highest current carrying capacity at lower temperatures, limited to 150C maximum temperature
- Maintains low insertion forces and high conductivity throughout its normal lifecycle

### TEMPER-GRIP SOCKET CONTACT

Temper-Grip contacts, featuring low electrical resistance, are designed with harsh environments and high temperatures in mind. Temper-Grips can withstand up to 220 amps in a size-0 contact and are capable of operating in temperatures of more than 200 degrees Celsius. Temper-Grips take advantage of a “napkin-ring” design, first utilized in engine connectors, which prevents the copper tines from “relaxing” at higher temperatures, thus maintaining a greater conductive area in all situations.

- Highest current carrying capacity at higher operating temperatures
- Superior performance in high-vibration applications



| Standard Contacts |      |
|-------------------|------|
| Size              | Amps |
| 16                | 13   |
| 12                | 23   |
| 8                 | 46   |
| 4                 | 80   |
| 0                 | 150  |

| High Performance Temper Grip Contacts |      |
|---------------------------------------|------|
| Size                                  | Amps |
| -                                     | -    |
| -                                     | -    |
| 8                                     | 65   |
| 4                                     | 110  |
| 0                                     | 220  |

| RADSOK Contacts |      |
|-----------------|------|
| Size            | Amps |
| -               | -    |
| -               | -    |
| 8               | 70   |
| 4               | 120  |
| 0               | 250  |

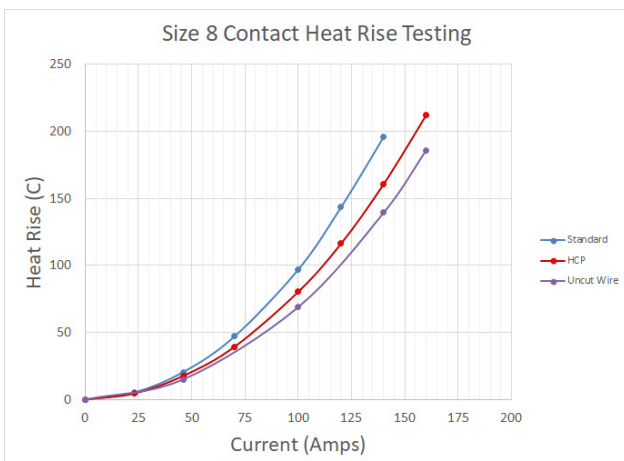
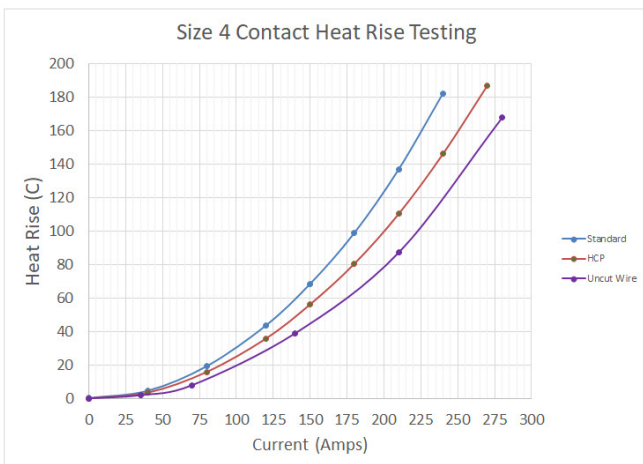
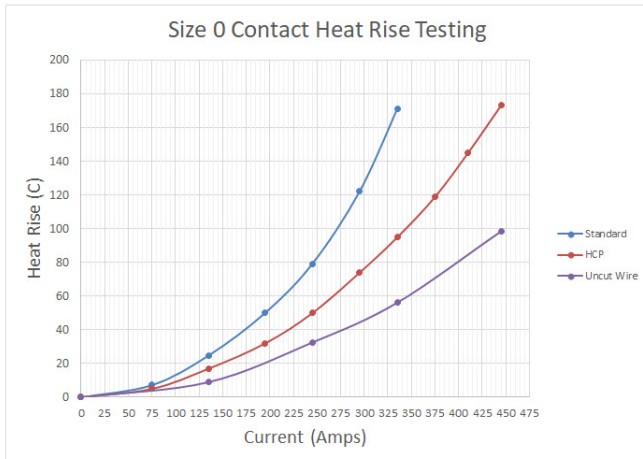


# CONTACT HEAT RISE DATA

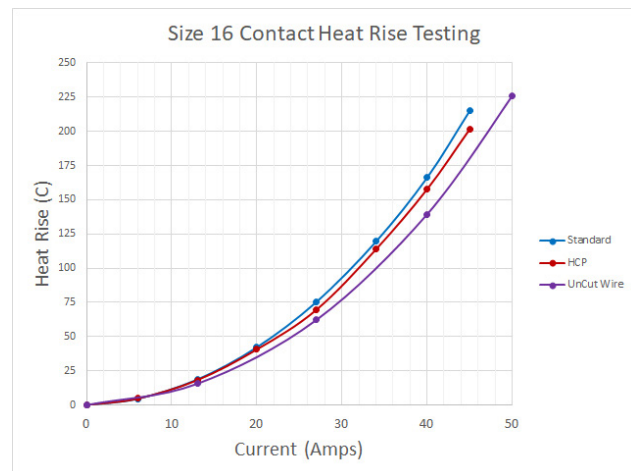
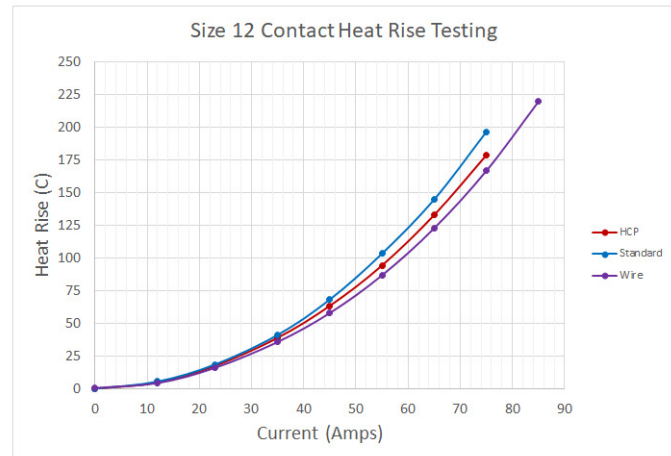


The data below shows expected heat rise for High Performance Temper Grip Contacts (sizes 0, 4, & 8) and for High Performance Contacts (sizes 12 & 16) compared to an ideal case, uncut wire (wire gauge matches contact size). The Standard Contacts meet mil-spec requirements but lack optimizations to reduce resistance and thus heat rise. Data is provided for designer justification to operate beyond the typical 40C heat rise limits where appropriate.

## HIGH PERFORMANCE TEMPER GRIP CONTACTS



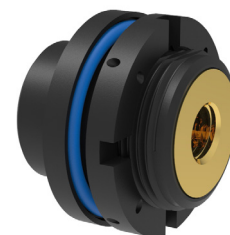
## HIGH PERFORMANCE CONTACTS



Test data collected using bare contact mated pairs in still, room temperature air. Current applied until contacts reached thermal stability. Data shown is not de-rated. Testing recommend in actual application to account for cooling effects, current excursions, contact wear, etc. Note that the establishment of electrical safety factors is left entirely up to the system designer, as they are in the best position to know what characteristics can be expected in a particular system.

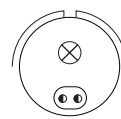
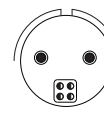
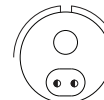
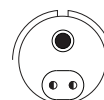
The collection of power connectors was designed to improve and expand upon the electrical performance of existing mil-spec type connectors. Utilizing our advanced insert and contact technologies, we are able to increase the operating voltages at altitude as well as operating currents while maintaining the robust environmental and mechanical performance already offered in our qualified military specification shells.

- Utilizing familiar military specification shell types, materials, and finishes
- Compatible with high performance contacts detailed on pages 5 & 6

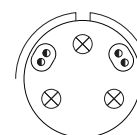
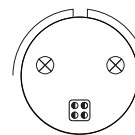
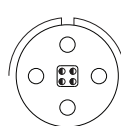
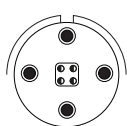
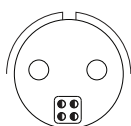


## CUSTOM DERIVATIVES IN DEVELOPMENT:

- Manual Service Disconnect (MSD) - Three stage plug for system maintenance
- Bulkhead Feedthrough - Receptacle installed between sealed/unsealed areas accepting plugs on both sides
- Rack and Panel - Blind mate connection with float mount functionality (below left)
- Dualok® - Vibration resistant plug prevents unintended disengagement during operation (below right)
- PCB Mount - Contacts with tails for soldering and shells available with threaded PCB mounting points
- Feedthrough - Customizable connector style with bolted termination, and optimized size/ weight for electrical performance (above right)



|                            |       |     |       |    |       |     |       |     |       |     |       |     |       |     |       |     |
|----------------------------|-------|-----|-------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
| Shell Size & Insert Arrg.: | 13-54 |     | 15-54 |    | 15-58 |     | 17-58 |     | 17-59 |     | 19-59 |     | 21-56 |     | 23-59 |     |
| Number of Contacts         | 4     | 0   | 2     | 2  | 4     | 4   | 4     | 4   | 1     | 2   | 1     | 2   | 2     | 4   | 1     | 2   |
| Contact Size               | 16    | 22D | 16    | 12 | 16    | 22D | 12    | 22D | 8     | 22D | 4     | 22D | 8     | 22D | 0     | 22D |

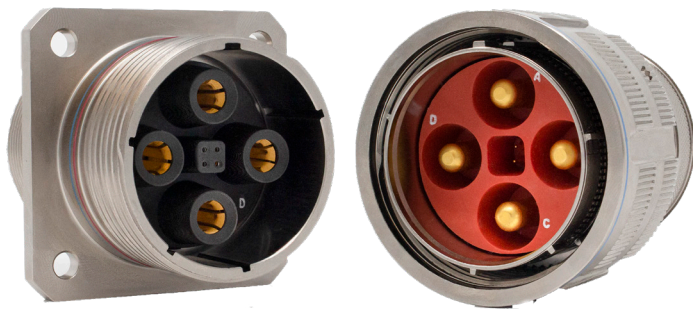


|                            |       |     |       |     |       |     |       |     |       |     |
|----------------------------|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
| Shell Size & Insert Arrg.: | 25-56 |     | 25-58 |     | 33-58 |     | 37-56 |     | 37-57 |     |
| Number of Contacts         | 2     | 4   | 4     | 4   | 4     | 4   | 2     | 4   | 3     | 4   |
| Contact Size               | 4     | 22D | 8     | 22D | 4     | 22D | 0     | 22D | 0     | 22D |

\*\*Some insert arrangements may have extended initial lead time depending on tool status.  
Please consult factory for more information.



CONTACT LEGEND 0 4 8 12 16 22D



**High Voltage 38999 (HV38999) is an expansion of MIL-DTL-38999 type connectors developed to provide solutions for next generation power requirements.**

Future power distribution architecture is moving toward higher voltages beyond the capabilities of standard connectors. Through insert optimizations these specialty D38999s can safely carry high voltages and large currents while remaining partial discharge free to extend connector life.

**FEATURES & BENEFITS:**

- Designed to meet MIL-DTL-38999 mechanical and environmental performance
- Available safety interlock circuitry utilizes last mate, first break sequence
- All MIL-DTL-38999 shell configurations/finishes available including our Duallok high vibration plug
- Utilizes existing AS39029 type silver plated power contacts including the higher current Temper Grip socket and busbar/threaded termination styles.
- Accommodates standard MIL-DTL-38999 accessories

| Recommended Test Voltages |                             |       |                              |                       |
|---------------------------|-----------------------------|-------|------------------------------|-----------------------|
| ALTITUDE                  | DWV Test Voltages A/C (RMS) |       | PDIV Test Voltages A/C (RMS) | PDIV Test Voltage D/C |
|                           | Unmated                     | Mated |                              |                       |
| SEA LEVEL                 | 2600V                       | 4500V | 1550V                        | 2000V                 |
| 20,000 FT                 | N/A                         | 3850V | 1250V                        | 1700V                 |
| 30,000 FT                 |                             | 3700V | 1100V                        | 1400V                 |
| 50,000 FT                 |                             | 3000V | 850V                         | 1150V                 |

\*\*Note that the establishment of electrical safety factors is left entirely up to the system designer as they are in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular system

| 1.             | 2.          | 3.            | 4.                              | 5.                | 6.                  | 7.            |
|----------------|-------------|---------------|---------------------------------|-------------------|---------------------|---------------|
| Connector Type | Shell Style | Service Class | Shell Size - Insert Arrangement | Crimp Termination | Alternate Positions | Modifications |
| <b>HV</b>      | <b>97</b>   | <b>DZ</b>     | <b>25-56</b>                    | <b>GH</b>         |                     | <b>(RDG)</b>  |
| <b>HV</b>      | <b>06</b>   | <b>RF</b>     | <b>13-54</b>                    | <b>P</b>          | <b>A</b>            |               |

## 1. Connector Type

|            |                                 |
|------------|---------------------------------|
| <b>HV</b>  | High Voltage 38999              |
| <b>HVC</b> | High Voltage Composite 38999*** |

## 4. Shell Size - Insert Arrangement\*\*

Shell Size & Insert Arrangements on page 7

## 5. Crimp Termination

Add "G" before contact type designation for gold plated contacts

|          |                                     |
|----------|-------------------------------------|
| <b>P</b> | Pin Contacts                        |
| <b>S</b> | Socket Contacts                     |
| <b>A</b> | Pin, Less Contacts                  |
| <b>B</b> | Socket, Less Contacts               |
| <b>H</b> | High Performance Temper Grip Socket |
| <b>R</b> | RADSOK Socket                       |

## 2. Shell Style\*\*

|           |                                   |
|-----------|-----------------------------------|
| <b>00</b> | Wall Mount Receptacle             |
| <b>01</b> | Inline Receptacle                 |
| <b>02</b> | Box Mount Receptacle              |
| <b>06</b> | Straight Plug                     |
| <b>56</b> | DUALOK Plug                       |
| <b>96</b> | Plug with Integral Backshell      |
| <b>07</b> | Jam Nut Receptacle                |
| <b>97</b> | Reduced Flange Jam Nut Receptacle |

## 6. Alternate Positions

|          |                           |
|----------|---------------------------|
|          | Blank for normal rotation |
| <b>A</b> | A rotation                |
| <b>B</b> | B rotation                |
| <b>C</b> | C rotation                |
| <b>D</b> | D rotation                |
| <b>E</b> | E rotation                |

## 7. Modifications\*\*

P3D = 3D Printed, recommended for fit checks and benchtop testing

|              |                                       |
|--------------|---------------------------------------|
| <b>(3D1)</b> | P3D Metal Clip Insert, Standard Shell |
| <b>(TPS)</b> | Touch Proof Tips (Pin contacts only)  |
| <b>(RDG)</b> | Reduced Grommet*                      |

## 3. 175°C Service Class

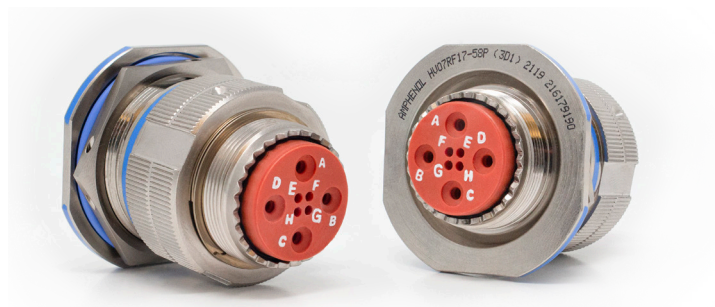
|            |                                                                                              |                                                                                       |
|------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>RW</b>  | Olive Drab Cadmium Plated Aluminum (500 Hour Salt Spray) or Composite (2000 Hour Salt Spray) |                                                                                       |
| <b>DT</b>  | Durmalon Plated Aluminum (500 Hour Salt Spray)                                               |    |
| <b>DZ</b>  | Black Zinc-Nickel Plated Aluminum (500 Hour Salt Spray)                                      |    |
| <b>RF</b>  | Electroless Nickel Plated Aluminum (48 Hour Salt Spray) or Composite (2000 Hour Salt Spray)  |    |
| <b>RKN</b> | Passivated Stainless Steel, Non-Firewall (500 Hour Salt Spray) ****                          |    |
| <b>RL</b>  | Nickel Plated, Passivated Stainless Steel, Non-Firewall (500 Hour Salt Spray) ****           |   |
| <b>DS</b>  | AP-93 Tri-Nickel Alloy Plated Aluminum (1000 Hour Salt Spray)                                |  |

\*Provides compatibility for size 0 contacts with 2awg, size 4 contacts with 6awg, and size 8 contacts with 10awg. Crimp well reducer bushings are included.

\*\*Contact factory for additional configurations/customization

\*\*\*Available for insert arrangements 13-54, 15-54, 15-58 and 17-58

\*\*\*\* Contact factory for firewall performance



# HV38999 HOW TO ORDER- ALTERNATE RECEPTACLE TERMINATION



| 1.             | 2.          | 3.            | 4.                              | 5.            | 6.           | 7.                  | 8.            |
|----------------|-------------|---------------|---------------------------------|---------------|--------------|---------------------|---------------|
| Connector Type | Shell Style | Service Class | Shell Size - Insert Arrangement | Contact Style | Contact Type | Alternate Positions | Modifications |
| <b>HV</b>      | <b>02</b>   | <b>RF</b>     | <b>25-56</b>                    | <b>F</b>      | <b>P</b>     | <b>A</b>            | <b>(MTT)</b>  |
| <b>HV</b>      | <b>27</b>   | <b>RW</b>     | <b>37-57</b>                    | <b>B</b>      | <b>R</b>     |                     |               |

| 1. Connector Type |                    |
|-------------------|--------------------|
| <b>HV</b>         | High Voltage 38999 |

| 2. Shell Style** |                                   |
|------------------|-----------------------------------|
| <b>02</b>        | Box Mount Receptacle              |
| <b>27</b>        | Jam Nut Box Mount                 |
| <b>97</b>        | Reduced Flange Jam Nut Receptacle |

| 4. Shell Size - Insert Arrangement**       |  |
|--------------------------------------------|--|
| Shell Size & Insert Arrangements on page 7 |  |

| 5. Contact Style** |                           |
|--------------------|---------------------------|
| <b>F</b>           | Female Thread Termination |
| <b>M</b>           | Male Thread Termination   |
| <b>B</b>           | Busbar                    |

| 8. Modifications**                                                |                                       |
|-------------------------------------------------------------------|---------------------------------------|
| P3D = 3D Printed, recommended for fit checks and benchtop testing |                                       |
| <b>(3D1)</b>                                                      | P3D Metal Clip Insert, Standard Shell |
| <b>(TPS)</b>                                                      | Touch Proof Tips (Pin contacts only)  |
| <b>(MTT)</b>                                                      | Termination With Metric Threading     |

| 6. Contact Type                                                  |                                     |
|------------------------------------------------------------------|-------------------------------------|
| Add "G" before contact type designation for gold plated contacts |                                     |
| <b>P</b>                                                         | Pin Contacts                        |
| <b>S</b>                                                         | Socket Contacts                     |
| <b>H</b>                                                         | High Performance Temper Grip Socket |
| <b>R</b>                                                         | RADSOK Socket                       |

| 7. Alternate Positions |                           |
|------------------------|---------------------------|
|                        | Blank for normal rotation |
| <b>A</b>               | A rotation                |
| <b>B</b>               | B rotation                |
| <b>C</b>               | C rotation                |
| <b>D</b>               | D rotation                |
| <b>E</b>               | E rotation                |

| 3. 175°C Service Class |                                                                                    |  |
|------------------------|------------------------------------------------------------------------------------|--|
| <b>RW</b>              | Olive Drab Cadmium Plated Aluminum (500 Hour Salt Spray)                           |  |
| <b>DT</b>              | Durmalon Plated Aluminum (500 Hour Salt Spray)                                     |  |
| <b>DZ</b>              | Black Zinc-Nickel Plated Aluminum (500 Hour Salt Spray)                            |  |
| <b>RF</b>              | Electroless Nickel Plated Aluminum (48 Hour Salt Spray)                            |  |
| <b>RKN</b>             | Passivated Stainless Steel, Non-Firewall (500 Hour Salt Spray) ****                |  |
| <b>RL</b>              | Nickel Plated, Passivated Stainless Steel, Non-Firewall (500 Hour Salt Spray) **** |  |
| <b>DS</b>              | AP-93 Tri-Nickel Alloy Plated Aluminum (1000 Hour Salt Spray)                      |  |

\*\*Contact factory for additional configurations/customization

\*\*\*Contact factory for firewall performance

\*\*\*\* Contact factory for firewall performance

| Termination Thread Size* |           |          |
|--------------------------|-----------|----------|
| Contact Size             | Imperial  | Metric   |
| <b>8</b>                 | 4-40 UNC  | M3 x 0.5 |
| <b>4</b>                 | 8-32 UNC  | M4 x 0.7 |
| <b>1/0</b>               | 10-32 UNF | M5 x 0.8 |

\*Default thread type is imperial. Use (MTT) mod code for metric



## QUICK-LOK

The QUICK-LOK product line is a descendant of the HV38999 product profile which is designed to provide solutions for next generation power requirements. QUICK-LOK offers a bayonet coupling mechanism which allows for quick, ¼ turn mating, with confirmation of a full mate via an audible indication when the bayonet pins lock into position.



## HVGT

The HVGT connector series, with reverse bayonet coupling, packages the high voltage/power HV38999 inserts into a ruggedized shell with roots in the military market. The insert technology allows for higher power density per shell when compared to traditional MIL-DTL-5015 arrangements. Extended creepage paths for high voltage operation may also provide a larger safety factor in environments with a high degree of pollution.



## FEATURES & BENEFITS:

- Audible and tactile feedback when fully mated
- Assurance of fully mated connectors in visually restricted areas
- Available safety interlock circuitry utilizes last mate, first break sequence
- Designed to meet applicable mechanical and environment requirements for aircraft and military ground vehicles

| Recommended Test Voltages |                             |       |                              |                       |
|---------------------------|-----------------------------|-------|------------------------------|-----------------------|
| ALTITUDE                  | DWV Test Voltages A/C (RMS) |       | PDIV Test Voltages A/C (RMS) | PDIV Test Voltage D/C |
|                           | Unmated                     | Mated |                              |                       |
| SEA LEVEL                 | 2600V                       | 4500V | 1550V                        | 2000V                 |
| 20,000 FT                 | N/A                         | 3850V | 1250V                        | 1700V                 |
| 30,000 FT                 |                             | 3700V | 1100V                        | 1400V                 |
| 50,000 FT                 |                             | 3000V | 850V                         | 1150V                 |

\*\*Note that the establishment of electrical safety factors is left entirely up to the system designer as they are in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular system

## Space and Weight Saving Alternative to Wiring



Amphenol Commercial Air partners with several sister divisions to design and manufacture custom busbar solutions for aerospace applications. Our approach prioritizes weight and space savings over traditional wire solutions for boxes, batteries, and more. Types of busbars include:

- Laminated Busbars
- Over-molded Busbars
- Powder Coated Busbars
- Flexible Busbars

### KEY FEATURES

- Designed to meet applicable mechanical and environmental performance standards
- Multiple materials and finishes available to meet application needs
- Integrated hardware for ease of assembly
- Aluminum or copper base material with gold, silver or nickel finishes
- Multiple conductors may be combined into single, stacked assemblies



## Ruggedized High Power Interconnect



Voltarius is a high voltage, latch-assisted connector based off the Amphenol Industrial Powerlok connector with upgrades to enhance performance for military and aerospace applications. These aluminum connectors are optimized for larger conductor sizes in single, double, and triple pole configurations while maintaining essential safety features such as touch proof contacts and interlock circuitry.

### KEY FEATURES

- Receptacle can be configured as a drop-in replacement for the Powerlok G2 connector
- Design mitigates partial discharge for operation with high voltages at altitude
- 10 mm or 14 mm contacts provisioned for 6 AWG to 4/0 AWG wiring and current carrying capability up to 450A
- Designed to meet applicable mechanical and environmental requirements for aircraft and military vehicles
- Metal latch with secondary locking ensures rigid shell-to-shell bottoming
- 6 cavity/23 AWG contact pass-through last mate, first break safety interlock circuitry integral to design (multi-pole only)
- Independent shield termination provisions for interlocks and power poles
- Dust caps and strain relief hardware available



## Voltarius 10mm

10mm Voltarius connectors are designed to handle amperages up to 250A with crimp contacts available to support cables between 6 AWG and 2/0 AWG.

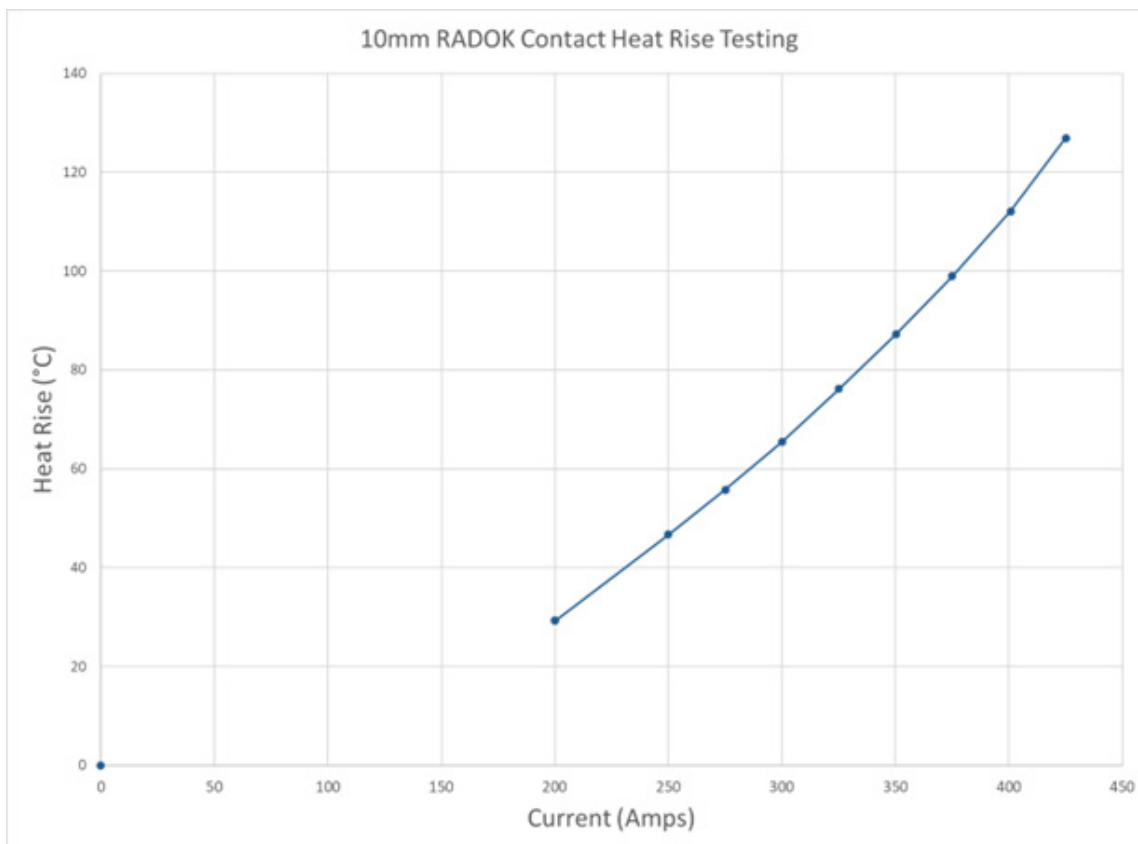
## Voltarius 14mm

14mm Voltarius connectors are designed to handle amperages up to 450A with crimp contacts available to support cables between 2/0 and 4/0 AWG.

- Rated for up to 500 Mating Cycles
- Aluminum shell with Mil-Spec plating options
- Available safety interlock circuitry utilizes last mate, first break sequence

## Voltarius Test Voltages - Sea Level

| DWV Test Voltages<br>A/C RMS (Mated) | PDIV Test Voltages<br>A/C RMS (Mated) | PDEV Test Voltages<br>A/C RMS (Mated) |
|--------------------------------------|---------------------------------------|---------------------------------------|
| 9500V                                | 1900V                                 | 1800V                                 |



\*10mm contact tested in 3-pole voltarius connector in still, room temperature air. Current applied until contact reaches thermal stability. Data Shown is not De-rated. Testing recommended in actual application to account for cooling effects, current excursions, contact wear, etc.

\*\*Test Voltages are for the 10mm, 3 pole arrangement of voltarius. Electrical data for other arrangements available soon.

\*\*\*Note that the establishment of electrical safety factors is left entirely up to the system designer as they are in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular system

# VOLTARIUS PLUG- HOW TO ORDER



| 1.             | 2.          | 3.            | 4.              | 5.                     | 6.                                | 7.              | 8.                     | 9.         | 10.          |
|----------------|-------------|---------------|-----------------|------------------------|-----------------------------------|-----------------|------------------------|------------|--------------|
| Connector Type | Shell Style | Service Class | Number of Poles | Shell/<br>Contact Size | Sealing Range/<br>Crimp Well Size | Contact<br>Type | Alternate<br>Rotations | Interlocks | Mod Code     |
| <b>VT</b>      | <b>06</b>   | <b>RZ</b>     | <b>2-</b>       | <b>3</b>               | <b>ED-</b>                        | <b>H</b>        | <b>N</b>               | <b>L</b>   | <b>(CAP)</b> |

| 1. Connector Type |           |
|-------------------|-----------|
| <b>VT</b>         | Voltarius |

| 2. Shell Style |               |
|----------------|---------------|
| <b>06</b>      | Straight Plug |

| 3. Service Class |                                                         |                                                                                     |
|------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>RW</b>        | Olive Drab Cadmium Plated Aluminum (48 Hour Salt Spray) |                                                                                     |
| <b>RX</b>        | Black Anodize, Non Conductive                           |  |
| <b>RZ</b>        | Black Zinc-Nickel Plated Aluminum (48 Hour Salt Spray)  |  |
| <b>RF</b>        | Electroless Nickel Plated Aluminum (48 Hour Salt Spray) |  |

| 4. Poles  |          |
|-----------|----------|
| <b>1-</b> | Single** |
| <b>2-</b> | Double   |
| <b>3-</b> | Triple   |



| 5. Shell Size |       |
|---------------|-------|
| <b>3</b>      | 10 mm |
| <b>5</b>      | 14 mm |

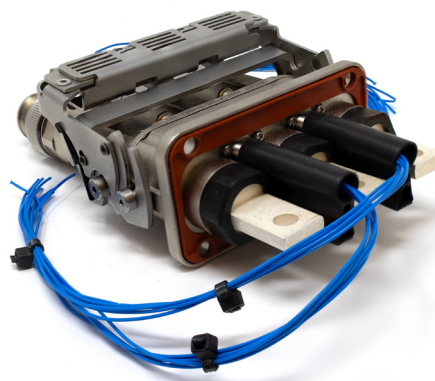
| 6. Sealing Range/<br>Crimp Well Size                                                                                                  |  |
|---------------------------------------------------------------------------------------------------------------------------------------|--|
| See table I for sealing range and crimp wells for 10 mm connector. See table II for sealing range and crimp well for 14 mm connectors |  |

| 7. Contact Type |                                     |
|-----------------|-------------------------------------|
| <b>H</b>        | High Performance Temper Grip Socket |
| <b>R</b>        | RADSOK Socket                       |

| 8. Alternate Rotations |                  |
|------------------------|------------------|
| <b>N</b>               | Normal Rotation* |
| <b>A</b>               | A Rotation       |
| <b>B</b>               | B Rotation       |
| <b>C</b>               | C Rotation       |
| <b>D</b>               | D Rotation       |
| <b>E</b>               | E Rotation       |

| 9. Interlocks |                  |
|---------------|------------------|
| <b>P</b>      | Pin Interlocks** |
| <b>L</b>      | Less Interlocks  |

| 10. Mod Code |                     |
|--------------|---------------------|
| <b>(CAP)</b> | Protective Dust Cap |



\*For multi-pole configurations use "N" (user configurable rotations)

\*\*Single pole currently only available less interlocks. Multi-pole includes 6 interlocks per module.

Table I

| 06 AWG                | 04 AWG                | 02 AWG                | 01 AWG                | 1/0 AWG               | 2/0 AWG               |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <b>AA</b> (.225-.253) | <b>AB</b> (.291-.356) | <b>AC</b> (.355-.435) | <b>AD</b> (.411-.503) | <b>AE</b> (.474-.581) | <b>AF</b> (.494-.611) |
| <b>CA</b> (.347-.425) | <b>CB</b> (.411-.503) | <b>CC</b> (.474-.581) | <b>FD</b> (.419-.513) | <b>CE</b> (.555-.679) | <b>FF</b> (.546-.668) |
| <b>DA</b> (.291-.356) | <b>DB</b> (.355-.435) | <b>DC</b> (.419-.513) |                       | <b>FE</b> (.494-.611) | <b>HF</b> (.555-.679) |
| <b>EA</b> (.253-.282) | <b>KB</b> (.283-.300) | <b>KC</b> (.347-.425) |                       | <b>KE</b> (.411-.503) | <b>KR</b> (.474-.581) |
| <b>GA</b> (.355-.435) | <b>GB</b> (.419-.513) |                       |                       |                       |                       |

Table II

| 2/0 AWG               | 3/0 AWG               | 4/0 AWG               |
|-----------------------|-----------------------|-----------------------|
| <b>AF</b> (.525-.582) | <b>AG</b> (.525-.582) | <b>AH</b> (.525-.582) |
| <b>BF</b> (.582-.660) | <b>BG</b> (.582-.660) | <b>BH</b> (.582-.660) |
| <b>CF</b> (.647-.695) | <b>CG</b> (.647-.695) | <b>CH</b> (.647-.695) |
| <b>DF</b> (.685-.758) | <b>DG</b> (.685-.758) | <b>DH</b> (.685-.758) |
|                       | <b>EG</b> (.758-.822) | <b>EH</b> (.758-.822) |
|                       |                       | <b>FH</b> (.822-.977) |

The Applicable sealing range is shown in parentheses. The sealing diameter is the cable primary insulation diameter

# VOLTARIUS RECEPTACLE- HOW TO ORDER



| 1.             | 2.          | 3.            | 4.              | 5.                 | 6.                  | 7.               | 8.           | 9.                  | 10.        | 11.          |
|----------------|-------------|---------------|-----------------|--------------------|---------------------|------------------|--------------|---------------------|------------|--------------|
| Connector Type | Shell Style | Service Class | Number of Poles | Shell/Contact Size | Contact Termination | Termination Size | Contact Type | Alternate Rotations | Interlocks | Mod Code     |
| <b>VT</b>      | <b>02</b>   | <b>RX</b>     | <b>2-</b>       | <b>3</b>           | <b>Z</b>            | <b>1-</b>        | <b>P</b>     | <b>N</b>            | <b>L</b>   | <b>(CAP)</b> |

## 1. Connector Type

|           |           |
|-----------|-----------|
| <b>VT</b> | Voltarius |
|-----------|-----------|

## 2. Shell Style

|           |                         |
|-----------|-------------------------|
| <b>02</b> | Flange Mount Receptacle |
|-----------|-------------------------|

## 3. Service Class

|           |                                                          |  |
|-----------|----------------------------------------------------------|--|
| <b>RW</b> | Olive Drab Cadmium Plated Aluminum (500 Hour Salt Spray) |  |
| <b>RX</b> | Black Anodize, Non-Conductive                            |  |
| <b>RZ</b> | Black Zinc-Nickel Plated Aluminum (500 Hour Salt Spray)  |  |
| <b>RF</b> | Electroless Nickel Plated Aluminum (48 Hour Salt Spray)  |  |

## 4. Poles

|           |          |
|-----------|----------|
| <b>1-</b> | Single** |
| <b>2-</b> | Double   |
| <b>3-</b> | Triple   |

## 5. Shell/Contact Size

|          |               |
|----------|---------------|
| <b>3</b> | 10 mm Contact |
| <b>5</b> | 14 mm Contact |

## 6. Contact Termination

|          |                             |
|----------|-----------------------------|
| <b>Z</b> | Through-hole                |
| <b>T</b> | Threaded Busbar             |
| <b>F</b> | Female Threaded Termination |
| <b>M</b> | Male Thread Termination     |

## 7. Termination Size

|                                   |
|-----------------------------------|
| See table 3 for Termination Sizes |
|-----------------------------------|

## 8. Contact Type

|          |     |
|----------|-----|
| <b>P</b> | Pin |
|----------|-----|

## 9. Alternate Rotations

|          |                  |
|----------|------------------|
| <b>N</b> | Normal Rotation* |
| <b>A</b> | A Rotation       |
| <b>B</b> | B Rotation       |
| <b>C</b> | C Rotation       |
| <b>D</b> | D Rotation       |
| <b>E</b> | E Rotation       |

## 10. Interlocks

|          |                     |
|----------|---------------------|
| <b>S</b> | Socket Interlocks** |
| <b>L</b> | Less Interlocks     |

\*\*Single pole currently only available less interlocks. Multi-pole includes 6 interlocks per module

## 11. Mod Code

|              |                     |
|--------------|---------------------|
| <b>(CAP)</b> | Protective Dust Cap |
|--------------|---------------------|

\*For multi-pole configurations use "N" (user configurable rotations)



**Table 3 - Termination Size**

| Designator | Thread Type         |                 |                             |                           |
|------------|---------------------|-----------------|-----------------------------|---------------------------|
|            | Through-Hole Busbar | Threaded Busbar | Female Threaded Termination | Male Threaded Termination |
| <b>1</b>   | 6.5 mm              | M6X1-7H         | M6X1-7H                     | M6X1-7H                   |
| <b>B</b>   | 0.265 in            | .250-20UNC      | .250-20UNC                  | .250-20UNC                |
| <b>3</b>   | 8.5 mm              | M8X1.25-7H      | M8X1.25-7H                  | M8X1.25-7H                |
| <b>C</b>   | .332                | .3.125-16UNC    | .3.125-16UNC                | .3.125-16UNC              |

[illegible]

## Notes

[illegible]

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