

Amphenol
Aerospace



POWER GUIDE

Amphenol Aerospace

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Amphenol
Aerospace


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COMPARISON CHART

Product Line	Picture	Description & Coupling Type	Total Amperage Range (30°C heat rise)	Connector Size Range	Signal Contact Availability	Contact Gauge Range
High Power Series		Heavy Duty	40 to 1200	Medium to Large	Power and Signal	0 to 16
MGT Bayonets		Heavy Duty Quick Disconnect (1/4 turn bayonet)	13 to 1000	Medium to Large	Power and Signal	0 to 16
Tri-Power Connectors		High Current, medium duty, D38999-style interface	240 to 620	Medium to Large	Power Only	0 to 8
Matrix 5015		Medium Duty, threaded	13 to 1000	Small to Large	Power and Signal	0 to 16
Ram-Lock with High Power Contacts		Postive-Locking Push-Pull	70 to 500	Small-Medium	Power Only	4/0 to 12
38999 with High Power Contacts		Medium Duty	5 to 560	Small to Medium	Power and Signal	4 to 22D
BOB (Best of Both) 5015 Modular Connectors		Heavy Duty, Jack-Screw/ Rack and Panel	up to 2000	Medium-Extra Large	Power and Signal	0 to 16
Series Five with High Current Pins		Medium Duty, Triple Start Thread Coupling	5 to 500	Micro-Miniature to Medium	Power and Signal	12 to 22D

Max Temp Rating (°C)*	Service Rating (voltage rating)	Shell Material	Standard Contact Terminations	Military Specification Reference	Circular or Rectangular	Common Applications	Page
150 to 200+	Same as 5015	Aluminum or Stainless Steel	Crimp, Solder, Bus bar, Threaded Post, PC Tail	MIL-DTL-5015	Circular	Hybrid and Conventional Ground Vehicles, Power Boxes	6
125 to 200	Same as 5015	Aluminum or Stainless Steel	Crimp, Solder, Busbar	MIL-DTL-5015	Circular	Hybrid and Conventional Ground Vehicles, Power Boxes	6
150	By arrangement	Aluminum or Stainless Steel	Crimp	MIL-DTL-38999	Circular	Power Systems	7
175 to 200	Same as MGT	Aluminum or Stainless Steel	Crimp	MIL-DTL-5015	Circular	High power in Aircraft/ Drones, ground support	7
260	Same as 5015	Aluminum or Stainless Steel	Crimp, Solder, Bus bar, Threaded Post, PC Tail	None	Circular	eVTOL, battery terminals, vehicle charging	8
200	Per D38999	Aluminum or Stainless Steel	Crimp	MIL-DTL-D38999	Circular	Avionics, directed energy weapons, eVTOL, power distribution	8
200	Same as 5015	Aluminum or Stainless Steel	Crimp, Solder, Bus bar, Threaded Post, PC Tail	MIL-DTL-5015	Rectangular	Military ground vehicle power distribution systems	9
200	Exceeds D38999 (Higher Voltage)	Aluminum or Stainless Steel	Crimp	MIL-DTL-D38999	Circular	Aircraft, C4ISR, Commercial Space Avionics	9

COMPARISON CHART

Product Line	Picture	Description & Coupling Type	Total Amperage Range (30°C heat rise)	Connector Size Range	Signal Contact Availability	Contact Gauge Range
Matrix 38999		Heavy Duty, Triple Start Thread Coupling	140 to 1000	Medium to Large	Power and Signal	0 to 16
PowerSafe Connectors		Medium Duty, Triple Start Thread Coupling	16 to 400	Medium to Large (size 13, 17 and 25)	Power only	6 to 16
MIL-DTL-22992 & Commercial Class L		Heavy Duty, Threaded	40 to 200	Large	Power and Ground	1/0 to 6
QWLD/QWL (MIL-C-22992)		Heavy Duty, Threaded	23 to 800	Medium to Large	Power and Signal	0 to 16

Max Temp Rating (°C)*	Service Rating (voltage rating)	Shell Material	Standard Contact Terminations	Military Specification Reference	Circular or Rectangular	Common Applications	Page
200	Same as 5015	Aluminum or Stainless Steel	Crimp, Solder, Bus bar, Threaded Post, PC Tail	MIL-DTL-D38999 and MIL-DTL-5015	Circular	Shipboard, power distribution	10
175 to 200	Up to 500 volts	Aluminum, Stainless steel, marine bronze	Crimp	VG96944-04 - Derived from MIL-DTL-38999 series III	Circular	Battlefield, Ground vehicle, C4ISR and harsh industrial markets	10
175	By arrangement	Aluminum	Crimp	MIL-DTL-22992	Circular	Battlefield power (Shelters, Generators)	11
175	Same as 5015	Aluminum	Crimp, Solder	MIL-DTL-22992	Circular	Ground support equipment, Industrial and commercial use	11

HIGH POWER CONNECTORS



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings:	40-1200 amps
Contact Gauges:	0 to 16
Voltage Ratings:	per MIL-DTL-5015

High Power Series

Description:

The High Power Series features advanced pin & socket contact technology resulting in 30-40% higher current carrying capacity compared to standard contacts. The proven RadSok technology along with the new high current, high temperature Temper-Grip contacts provide a solution for any operating temperature. Utilizing two proven connector mating designs (Matrix 5015 and MGT-5015) and a host of new contact termination methods, the High Power Series offers custom connector performance in a standard catalog offering!

Features & Benefits:

- 30-40% increased current carrying capability over standard 5015 connectors
- Catalog customization reduces design-in time
- Standard interfaces allow users to utilize existing cabling design where high performance is needed
- Contact termination methods including crimp, male and female threaded termination, solder, PCB and bus-bar
Over 25 tooled insert arrangements for current carrying capacity from 50 to 1200 Amps
- Easily Customizable, and models available on our online configurator



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings:	50-1000 amps
Contact Gauges:	0 to 16
Voltage Ratings:	1000-7000v

MGT-5015 Reverse Bayonet Coupling

Description:

The MGT line of connectors is an expansion of the GT-5015 series, offering a rugged environment connector in new finishes such as Durmalon and Black Zinc Nickel for military applications. Available with press-fit or crimp removable contacts, these connectors use machined shells which can be customized for any design to meet a specific application's needs. Termination options include crimp, solder, PC tail, threaded, or custom designed bus bars. Upgraded socket contacts include the RADSOK® high current sockets and Amphenol's High temperature Temper-Grip socket, which carries more current than a standard contact at higher temperatures than a RADSOK.

Features & Benefits:

- Quick positive coupling
- Waterproof-IP67 rated
- High shock and vibration capabilities
- Numerous military and commercial finishes available
- Rated for 2000 mating cycles
- Up to 50% more ampacity with the use of RADSOK
- Customized solutions available

HIGH POWER CONNECTORS



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings:	40-1200 amps
Contact Gauges:	0 to 16
Voltage Ratings:	per MIL-DTL-5015

Tri Power Connectors

Description:

The Amphenol Power Connectors incorporate the proven design of the MIL-DTL-38999 Series III Tri-Start connectors with the evolving technology of the High Power RADSOK contacts. This allows customers to choose contacts ranging from 70 to 250 amps (240 to 1000 amps per connector) allowing more power in a smaller connector. Now available with temper-grip sockets, this design based off connectors originally designed for the international space station will solve all your high power requirements!

Features & Benefits:

- Also available in our alternative to cadmium plating, Durmalon
- Black Zinc Nickel is also available
- Durmalon and Black Zinc Nickel are RoHS and proven to meet coupling torque, shell-to-shell conductivity, and durability tests required by the MIL-DTL-38999 salt spray requirements
- Largest connector has 4 size 0 gauge contacts for 1000 amps total current carrying capability



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings:	13-1000 amps
Contact Gauges:	0 to 16
Voltage Ratings:	Example A- 1000 volts B- 2,000 volts

Matrix 5015

Description:

The Matrix MIL-DTL-5015 is a crimp, rear-release high power connector that provides an improved alternative to the older MIL-C-5015 solder type. It bridges the gap between an old connector standard and the need for environmental and high-performance standards in current technologies.

This high-power option with RADSOK contacts provides up to 40 percent increased current carrying capability when paired with Amphenol's high current pins.

Features & Benefits:

- Medium to heavy weight environmental cylindrical
- Multiple interlock systems ensure permanent insert retention
- Completely sealed against environmental extremes
- Seven mounting styles, in shell sizes 8 to 40
- Proprietary quick disconnect plug, with or without lanyard is available

HIGH POWER CONNECTORS



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings:	Up to 450 amps
Contact Gauges:	4/0 to 16

Ram-Lock with High Power Contacts

Description:

Amphenol's Ram-Lock interface is a positive locking, push-pull connector technology that is available across many different product lines. The single pole Ram-Lock design consists of high current contacts proven for use in high amperage applications. The single pole contacts used in this series come with many different options, including but not limited to crimp, busbar (lug) or threaded post. Utilizing Amphenol's new contact evaluation system, we are able to precisely tell you the amperage rating of your chosen connector based on your system's ambient temperature.

Features & Benefits:

- Capable of up to 450 amps, Ram-Lock's contacts are designed with the highest conductivity alloys available to be as close to uncut wire as possible!
- Side-by-side data available comparing to uncut wire and standard mil-spec conductors.
- Straight Plug or Right angle design is available to reduce form factor, contact Amphenol to configure termination.
- Can be packaged with Powerlug & Flexible high temp wire



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings:	200-2000 amps
Contact Gauges:	2 to 22D
Voltage Ratings:	Per D38999

38999 with High Power Contacts

Description:

The most widely used medium-sized circular connector is available with a host of power contact technologies including high current RadSok and Temper Grip Sockets, offering up to 40% more ampacity than standard contacts. Over 20 standard insert arrangements allow the substitution of a power contact in place of the Coax or Twin-ax contacts which come standard in a size 8 cavity. Additionally, Amphenol has a host of larger shell sizes for even higher power applications, up to size 37. For lower power applications there are over 10 tooled arrangements with contacts ranging from size 8 to 22D.

Features & Benefits:

- Standard modification codes allow ordering D38999 power to AAO's coded "TV" part numbers
- (PWR) = Standard Size 8 Power contact substitution
- (B65) = High Temperature, High Current Temper-Grip Contacts
- (RDS) = High Current, 10,000 mating cycle RadSok Sockets
- Available tooled sizes up to size 37 for even more current carrying capability

HIGH POWER CONNECTORS

BOB(Best of Both)5015 Modular Connectors

Description:

The BOB 5015 Modular Connector combines the space savings of a rectangular connector with the performance benefits of a circular connector! Utilizing military-qualified and fully tooled 5015 insert assemblies, high conductivity pins, and high current sockets, this is the perfect solution to maximize power distribution in a limited space. Available features include EMI protection, improved sealing, right angle and 45 degree options, and various contact termination designs.



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings: 200-2000 amps

Contact Gauges: 0 to 16

Voltage Ratings: Same as 5015

Features & Benefits:

- Up to 2000 amps of current carrying capability
- Fully customizable
- Modular, mix and match existing 5015 insert arrangements
- Tighten 2 Jackscrews only for full-mate

Series Five with High Current Pins

Description:

The MIL-DTL-38999 series of connectors was born in the 1960's to provide a ruggedized military solution featuring smaller contacts and higher density insert patterns than the already popular MIL-DTL-5015. Along the way, continuous evolution has brought about new shell styles, new coupling methods, new derivatives and new capabilities, all while remaining as popular as ever. Amphenol's new Series Five connector is the next evolutionary step in that impressive lineage, combining all of the capabilities of the traditional 38999 style connector in a lighter, smaller and more compact package to support the aerospace industry's ever-changing demands. The High Current pin (HCP) option provides higher ampacity in this standard product line, see catalog for details!



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings: 5- 500 amps

Contact Gauges: 12 to 22D

Voltage Ratings: Exceeds
D38999

Features & Benefits:

- 38999-Qualified Insulator and EMI Spring
- No Dielectric Bond Joint
- Triple Wire Seal
- AS39029-Qualified Gold-Plated Contacts
- Full Metal Clip Contact Retention
- Standard Accessory Thread
- "Diamond-Grip" Nut Design

HIGH POWER CONNECTORS



Matrix 38999

Description:

A hybrid of the High Power Matrix 5015 series and D38999 military connector, Amphenol's High Power Matrix 38999 connector uses mil-spec qualified inserts from the Matrix 5015 and combines them with the mechanical interface of the D38999 to bring you the best of both worlds. With the Matrix 5015 series, you can upgrade your EMI shielding performance to D38999 levels without changing your 5015 pin-outs or cable assemblies.

Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings: 140-1000 amps

Contact Gauges: 0 to 16

Voltage Ratings: Same as 5015

Features & Benefits:

- High Power Contact Technology (RADSOK, TEMPERGRIP)
- Based on D38999 Series III connectors
- Improved durability of receptacle threads
- 1000 HR Reach & RoHS compliant AP-93 Plating available
- Rapid prototypes available through Amphenol Tracer Service



PowerSafe Connectors

Description:

Qualified to VG96944 norms, PowerSafe connectors are designed to transmit high power with voltages over 500V in high demanding environments, in keeping the full safety of the user. The connectors are directly derived from the standard MIL-DTL-38999 III, with the same environmental characteristics. Their main benefit is to provide user safety with a first-to-mate earth contact directly linked to the shell. The last-to-mate first-to-break pilot contact allows the mating and unmating without power.

Features & Benefits:

- Transmit high-power with voltages over 500V (EN61984, EN60664)
- Meet the most stringent requirements of the market regarding user safety

Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings: 16-400 amps

Contact Gauges: 6 to 16

Voltage Ratings: Up to 500 volts

HIGH POWER CONNECTORS



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings: 40-200amps

Contact Gauges: 6 to 4/0

Voltage Ratings: 120/480VAC

MIL-DTL-22992 Class L

Description:

Amphenol's Class "L" 22992 heavy duty connectors are the largest size cylindricals. They are available only in the specific configurations prescribed by MIL-DTL-22992 for either military or industrial applications. This rigid configuration control assures correct interconnection of electrical circuits for maximum safety and reliability.

Features & Benefits:

- Heavy electrical loads: current range from 40 to 200 amperes
- Direct current or single three phase, 60/400 Hertz alternating current
- Automatic grounding for safety
- Meet MIL-DTL-22992 qualification
- Resistance to the operating environments of heat, moisture, vibration, high impact and immersion
- Double stub coupling threads for faster connections; no cross threading, easy cleaning
- Left hand accessory threads to minimize cable twisting, wire breakage, accidental connector disassembly
- Gaskets or "O" rings at appropriate surfaces for perfect weather tight connections



Contact:

Amphenol Aerospace
amphenol-aerospace.com

Current Ratings: 23-800 amps

Contact Gauges: 16 to 0

Voltage Ratings: per
MIL-DTL-22992

MIL-DTL-22992 QWLD

Description:

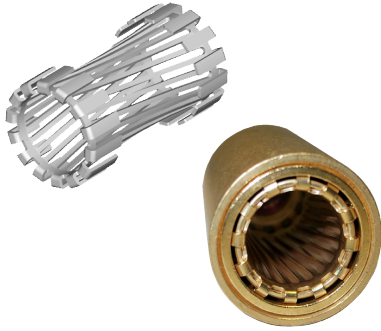
Amphenol QWLD Series heavy duty circular connectors provide reliable power and control functions in hostile environments where ordinary connectors cannot survive. Available in solder and crimp terminations, these connectors can be purchased to a military specification or Amphenol's proprietary part number system.

Features & Benefits:

- High Durability - water and explosion proof, resistant to abrasion, corrosion, vibration and shock
- Quick, Positive Mating - double stub thread per MIL-STD-1373 for fast coupling, easily cleaned
- Selection - over 300 industrial and MS-approved insert patterns available, including coaxial and thermocouple

CONTACT TECHNOLOGIES

RADSOK®



Description:

RADSOK® contacts feature a large interface area between the socket lamella and pin surface. This results in very low contact resistance, enabling the RADSOK® contacts' high current rating compared to traditional power contact designs. The hyperbolic lamella socket contact construction distributes normal forces over a high percentage of mating pin surface. This creates a smooth, even engagement effort. This force distribution also contributes to excellent performance in vibration applications with resistance to typical fretting corrosion.

Contact:

Amphenol Aerospace
amphenol-aerospace.com

Features & Benefits:

- Low contact engagement/separation forces
- Low contact resistance
- High mating cycle durability



Temper Grip

Description:

For use in high temperature (200°C+) applications, the Temper-Grip socket has been tested to maintain current capability in high-temperature situations where standard mil-spec socket contacts can begin to relax. Proven "Napkin-Ring" technology utilizes a stainless steel napkin ring to prevent the beryllium copper tines from "relaxing" at higher temperatures and maintaining a greater area of true contact in all situations to decrease resistance.

Features & Benefits:

- High temperature capability
- Napkin Ring technology
- Prevents failure during high temperature spikes

Contact:

Amphenol Aerospace
amphenol-aerospace.com

CONTACT TECHNOLOGIES

High Current Pins

Description:

Amphenol is now offering high current pins that can be ordered with any Amphenol connector. Using high conductivity alloys and precision machining, Amphenol has developed a high current pin to reduce power loss in your application. Push current carrying capability past the limits of Mil-Spec contact, simply improve the efficiency of your system while reducing the heat dissipated in your platform.

Features & Benefits:

- Full interchangeable with M39029
- available in any Amphenol connector series
- 10%-20% improved ampacity

Contact:

Amphenol Aerospace
amphenol-aerospace.com



CABLING & CABLE HARNESS



Contact:

Amphenol PCD
amphenolpcd.com

Custom Molded Cables for Harsh Environments

Description:

Amphenol MIL-22992 Class L cable assemblies are suited for Industrial and Military applications. These connectors and cable assemblies are designed to meet demands, ranging from 40 to 200 amps, for military shelters, vehicles, and remote power generation.

Features & Benefits:

- Superior performance
- MIL-M 24041 epoxies
- Perfected Overmold Technology



Contact:

Amphenol PCD
amphenolpcd.com

MIL- 22992 Class L Heavy Duty Power Cables

Description:

Amphenol MIL-22992 Class L assemblies are suited for Industrial and Military applications. These connectors and cable assemblies are designed to meet demands, ranging from 40 to 200 amps, for military shelters, vehicles, and remote power generation.

Features & Benefits:

- Superior performance
- MIL-M 24041 epoxies
- Perfected Overmold Technology

CABLING & CABLE HARNESS



Contact:

Amphenol Borisch Technologies
borisch.com

Harnesses and Cable Assemblies

Description:

Interconnect harnesses and cable assemblies are the link between mechanical controls and accessories, electronic components, and software on complex and demanding systems in aerospace, ground vehicle, and electronic applications, specifically engine and power distribution applications. Our harnesses are typically open-loomed or over-braided to precise electrical systems, environmental, and mechanical requirements. They meet RTCA DO160 and MIL-STD-810 qualification standards.

Features & Benefits:

- Open-Loom Harnesses
- Over-Braided Harnesses and Cables
- Over-Molded Harnesses and Cables
- Cable Assemblies: Point-to-Point, Pigtail, Inside-of-Box Assemblies



Bus bars

Description:

AALBF's bus bars provide a means of power distribution between power generator boxes, terminal blocks, and smaller terminal block interconnects. Bus bars are available in various standard sizes and shapes as well in custom designs. Bus bars present high mechanical resistance and are resistant to high temperatures.

Features & Benefits:

- Military & Commercial Aerospace specification
- Lightweight aluminum
- Perfectly suited for custom design

Contact:

Amphenol Air LB France
amphenol-airlb.fr



Custom Power Solutions

Description:

Often times an off-the-shelf power connector cannot be fit into an application, requiring a custom connector. Whether it is a slight derivate product or a brand new design, Amphenol's in-house engineering staff of power experts and host of advanced connector technology can design and build a custom connector.

Features & Benefits:

- In-house machining/milling capability to mechanical packaging on the connector
- Machining of dielectric materials allows AAO to create custom inserts for an requirements
- Pick and choose exactly what you need including contact termination coupling style, number of conductors, etc.

Contact:

Amphenol Aerospace
amphenol-aerospace.com

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NOTES

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, typical of notebook or legal stationery. There are no margins, text, or other markings present.