# Amphenol®

## Server Power

# The undisputed leader in interconnect systems for harsh environment applications

## Company Introduction

Manufacturing connectors since 1932, we take pride that Amphenol Industrial Global Operations (AIGO) is the undisputed leader in interconnect systems for harsh environment applications. Such applications require a high degree of engineering sophistication and precision manufacturing capability. Innovations such as our RADSOK® contact technology can supply gains of up to 50% in current carrying capability through the same size pin vs traditional contact designs. Connectors utilizing the RADSOK® technology outperform conventional power interconnect products and are a better choice for the high current needs demanded by sophisticated electronics.

AIGO's product lines consist of rectangular, standard, miniature, fiber optic, EMI/EMP filter and a variety of special application connectors. Additionally, we manufacture value-add flex circuit and cable assemblies.

Our global manufacturing facilities include locations in Sidney, NY, Fraser, MI, Midland, TX, Shenzhen and Zhuhai, China, Winnipeg, Canada, and Nogales, Mexico. Our Sidney, NY facility is both ISO09001 certified and qualified to MIL-STD-790 requirements.

## The Server Environment

Modern servers are capable of millions of transactions per second. They consume significant amounts of power, and produce tremendous amounts of heat while conducting the high amperage to manage these transactions.

Excessive heat can cause malfunctions and irreversible damage to servers while being expensive to manage. Therefore, minimizing temperature rise is a key concern when designing power systems for data centers.

AIGO has industry leading experience engineering high current and high density interconnect solutions. Our RADSOK® technology and our proven engineering experience for harsh environments enable Amphenol Industrial Global Operations to develop optimal solutions for server power interconnect needs.

## RADSOK® Technology Advantages

RADSOK'S twisted grid configuration allows for 50% more current to pass through the same size pin, while providing increased reliability, ampacity and cycle durability as well as lower insertion force, T-rise and voltage drop.

HIGH RELIABILITY

Unique RADSOK® design and construction technology create an electrical contact interface that exceeds typical interconnect requirements. Applications in aerospace, medical, industrial, automotive, mining, offshore, and other harsh environments depend on the high reliability of Amphenol's RADSOK® technology.

• LOW CONTACT ENGAGEMENT/SEPARATION FORCES

The hyperbolic lamella socket contact construction distributes normal forces over a high percentage of the 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.

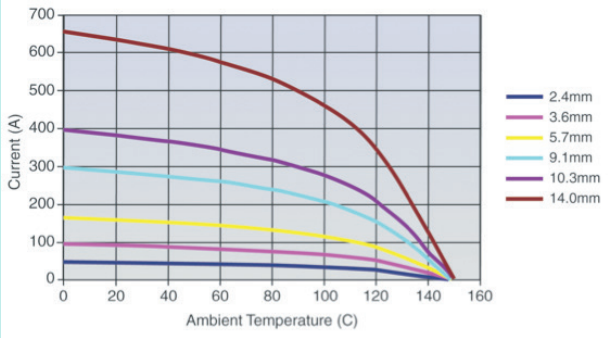
• LOW CONTACT RESISTANCE

The large interface area between the socket lamella and pin surface result in very low contact resistance, enabling the RADSOK® contacts' high current ratings compared to traditional power contact designs.

• HIGH MATING CYCLE DURABILITY

RADSOK® contacts with typical silver plating finishes have demonstrated survival of 20,000 mating cycles. Specialized plating and contact lubricants can extend cycle life to 200,000 matings or higher. Even with continuous exposure to harsh environmental abuse (salt, sand, and high humidity), RADSOK® contacts have been tested to maintain low contact resistance beyond 10,000 mating cycles.

**RADSOK® Derating Chart – Temperature vs. Current**
Based on single conductors in free air. Wire cross-section same size as pin contact cross-sectional area.

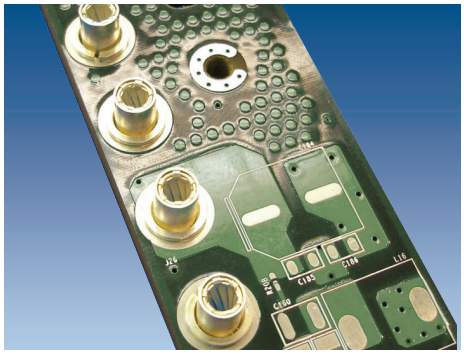


## RADSOK® Power to Board Connectors

High speed and high density electronics have driven demand for significant increases in the amount of power needed for power to board applications. To meet the need for higher current density interconnects Amphenol Industrial Global Operations developed the RADSOK® Power to Board series of connectors. RADSOK® Power to Board solutions facilitate the distribution of power with higher amperage, while allowing the design engineer to achieve size and weight reductions.

Conventional interconnects are limited in their ability to deliver high current without consuming excessive board surface area. The RADSOK® Power to Board series of connectors incorporates a hyperbolic lamella socket contact construction that provides more contact surface area. The high performance contact enables higher current carrying capabilities with lower temperature rises than traditional contact systems.

Amphenol's RADSOK® Power to Board product line offers many options for delivering high current and single-point connections to the PCB. Please contact your Amphenol Industrial representative for product extensions and custom applications.

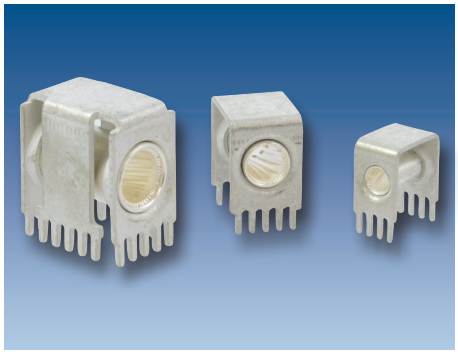


RADSERT™'s compact footprint design can deliver up to 120A of current to the board. The high current density and small surface area connection provides flexibility of board design. RADSERT™ contacts are available in either press-fit or solder termination.

### RADSOK® RADSERT™

- High power to board interconnect in a small package
- Hyperbolic socket design ensures many points of contact
- Solder version or pre-loaded RADSERTs are installed during board fabrication
- RADSERT™ 2.4mm (35A), 3.0mm (60A), 3.6mm (70A) 4.8mm (100A) & 6.0mm (120A)
- No special crimp tools required
- No threaded fasteners
- Eliminates risk of PTH cracking or delamination in board
- Faster through-put
- Available in Super Twist (ST)
- RoHS compliant

| Part Number | Size | Amps | Termination |
|---|---|---|---|
| 10-729398-241 | 2.4mm | 35 | Solder Type |
| 10-700813-001 | 2.4mm | 35 | Knurl Press Fit |
| 10-729360-001 | ST 2.4mm | 35 | Solder Type |
| 10-700977-001 | 3.6mm | 70 | Solder Type |
| 10-700985-001 | 3.6mm Close End | 70 | Solder Type |
| 10-707833-001 | 3.6mm | 70 | Knurl Press Fit |
| 10-729387-001 | ST 3.6mm | 70 | Solder Type |
| 10-707617-000 | ST 3.6mm | 70 | Knurl Press Fit |
| 10-729220-001 | ST 6.0mm | 120 | Solder Type |

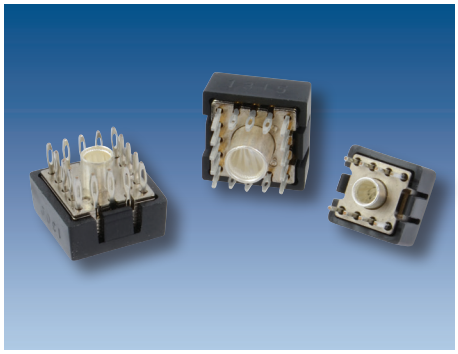


The RADSOK® PGY™ provides a compact and robust right angle power to board interconnect. Designed to mate with either a 3.6mm or 5.7mm pin, The RADSOK® PGY™ can bring up to 120A to the board. The radial design of the RADSOK® contact gives you more contact surface area lowering temperature rise and reducing potential heat related failures.

### RADSOK® PGY™

- Orthogonal, co-planar & right angle connections between PCBs or PCB to bus bar
- Compact footprint
- Legs of the PGY distribute high power evenly
- 2.4mm carries up to 35 Amps
- 3.0mm carries up to 60 Amps
- 3.6mm carries up to 70 Amps
- 4.8mm carries up to 100 Amps
- 5.7mm carries up to 120 Amps
- No threaded fasteners
- No special crimp tools required
- Faster through-put
- Available in Super Twist (ST)
- RoHS compliant

| Part Number | Size | Amps | Termination |
|---|---|---|---|
| 10-700298-000 | 3.6mm | 70 | Solder Type |
| 10-729394-000 | ST 3.6mm | 70 | Solder Type |
| 10-700261-000 | 5.7mm | 120 | Solder Type |
| 10-700261-000 | ST 5.7mm | 120 | Solder Type |



The RADSOK® PowerBlok™'s compact footprint ½" x ½" can supply up to 70A to backplane power connections. Current is distributed over 16 compliant pins. The PowerBlok™ is available for top or bottom entry and offered with a touch-proof cover.

### RADSOK® PowerBlok™

- High power to board interconnect in a small package
- Compact footprint 15.7mm x 15.7mm
- RADSOK® 2.4mm, 3.0mm & 3.6mm (35A-60A-70A)
- Backplane power interface with compliant pins for power
- Touchproof cover
- Hyperbolic socket design ensures many points of contact
- Reduces failure modes, eliminates burn outs
- No threaded fasteners
- No special crimp tools required
- Eliminates possible stress fractures in board
- Faster through-put
- Available in Super Twist (ST)
- RoHS compliant

| Part Number | Size | Amps | Termination |
|---|---|---|---|
| 10-707897-001 | ST 2.4mm | 35 | Press-fit |
| 10-700300-001 | ST 3.0mm | 60 | Press-fit |
| 10-707548-001 | ST 3.6mm | 70 | Press-fit |

## SURLOK™

- High current rating, high ampacity in a smaller package
- High reliability; meets or exceeds the electrical performance of bolt-on compression lugs
- Easy field installation - crimp with standard color-coded dies (Udie and 4 indenter). No torque wrenches required.
- Integral locking feature plus locking cap

- RADSOK® technology boosts the ampacity by 50% or more compared to mil-spec contacts. RADSOK® contacts provide the advantages of low insertion force and high cycle durability.
- RoHS compliant

| Wire Size | RADSOK® Size | Current Rating | SurLok Assembly Part Number | Lug Only Part Number | Conductor Max. Dia. | Crimp Code |
|---|---|---|---|---|---|---|
| 8 AWG | 3.6mm | 70 Amps | PSL-368K | PSL-368 | 0.17 in. | Red 21 |
| 6 AWG | 5.7mm | 100 Amps | PSL-576K | PSL-576 | 0.21 in. | Blue 24 |
| 4 AWG | 5.7mm | 125 Amps | PSL-574K | PSL-574 | 0.27 in. | Gray 29 |
| 2 AWG | 8.0mm | 175 Amps | PSL-802K | PSL-802 | 0.30 in. | Brown 33 |
| 1 AWG | 8.0mm | 200 Amps | PSL-801K | PSL-801 | 0.35 in. | Green 37 |
| 1/0 AWG | 10.3mm | 250 Amps | PSL-1031K | PSL-10310 | 0.38 in. | Pink 42 |
| 2/0 AWG | 10.3mm | 300 Amps | PSL-10320K | PSL-10320 | 0.44 in. | Black 45 |

| Pin Dia. | Max. Current | Part Number | Thread (male) |
|---|---|---|---|
| 3.6mm | 70 Amps | PSLP-36 | M3x0.5 |
| 5.7mm | 125 Amps | PSLP-57 | MSx0.8 |
| 8.0mm | 200 Amps | PSLP-80 | M8x1.25 |
| 10.3mm | 300 Amps | PSLP-103 | M10x1.5 |

Notes: (1) Surlok™ Assembly contains the wire crimp lug, plus a two-piece dielectric clamshell housing. Housing is available in black color as standard. Consult Amphenol Industrial for alternate color (2) Lug only specifies the wire crimp RADSOK®SurLok lug, less the plastic housings.

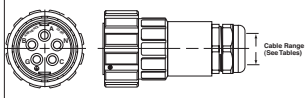
## AMPHE-GTR

- Utilizes RADSOK® high amperage socket contact technology, enabling increased current ratings to 120A on individual contacts.
- Currently available in shell size 32 with 4 or 5 conductors.
- The connector type is a straight plug which houses RADSOK® sockets and a box mount receptacle with pin contacts.
- Compression (setscrew) wire termination to the 4/6AWG or 8/10AWG conductors allows easy field replacement of pin or socket contacts, or complete plug and receptacle assemblies, without requiring specialized tooling.
- Meets same performance levels as GT Series.
- Listed to UL/CUL 1977/1682/817 Standard, control number 19VP.

- Utilizes a standard PG adapter watertight strain relief on the plug to achieve IP67 seal rating.
- Flammability rated to UL94V-0.

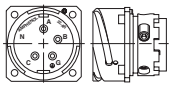
**AMPHE-GTR PLUG**

*GTR Plug in Shell Size 32 with 4 Conductors*




**AMPHE-GTR RECEPTACLE**

*GTR Receptacle in Shell Size 32 with 4 Conductors*



***4 Conductors***

| AIO Part Number | Description | Wire Range | Rated Current | Cable Range |
|---|---|---|---|---|
| GT06PCM32-ARS-30(29R) | Plug | 8-10 AWG | 30 Amps (cont.) | .510 - .582 |
| GT06PCM32-ARS-40(29R) | Plug | 8-10 AWG | 40 Amps (cont.) | .715 - .759 |
| GT06PCM32-ARS-50(29) | Plug | 4-6 AWG | 50 Amps (cont.) | .809 - .905 |
| GT06PCM32-ARS-70(29OS) | Plug | 4-6 AWG | 70 Amps (cont.) | 1.000 – 1.185 |
| GT06PCM32-ARS-120(36OS) | Plug | 4 AWG | 120 Amps (cont.) | 1.27 |
| GT030PCM32-ARP-80 | Receptacle | 4-6 AWG | 80 Amps (cont.) | N/A |
| GT030PCM32-ARP-120 | Receptacle | 4 AWG | 120 Amps (cont.) | N/A |

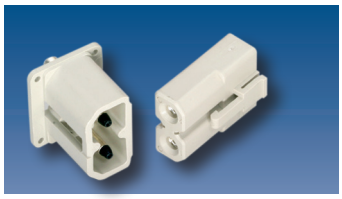
***5 Conductors***

| AIO Part Number | Description | Wire Range | Cable Range |
|---|---|---|---|
| 10-610142-001 | Plug | 8-10 AWG | .472 - .787 |
| 10-610142-002 | Plug | 8-10 AWG | .708 - .984 |
| 10-610142-003 | Plug | 4-6 AWG | .472 - .787 |
| 10-610142-004 | Plug | 4-6 AWG | .708 - .984 |
| 10-610147-001 | Receptacle | 8-10 AWG | N/A |
| 10-610147-002 | Receptacle | 4-6 AWG | N/A |
| 10-610222-001 | FBLM Receptacle | 8-10 AWG | N/A |
| 10-610222-002 | FBLM Receptacle | 4-6 AWG | N/A |

For complete dimensional information on Amphe-GTR Series see Product Data Sheet #190. Also refer to Amphenol GT Series catalog 12-024.

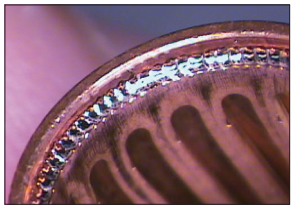
## AMPHE-PD

**Technical Specifications: 3.6mm is UL rated 69 amps (6 AWG). CSA rated 55 Amps (6 AWG). 5.7mm (non-UL) is rated for 120 amps.** Molded from UL94V-0 thermoplastic (self extinguishing). Meets RoHS and UL-94V-0 guidelines. 2-pole DC Power interconnect in about 1 square inch (3.6mm version) and 1.75 inch square (5.7mm version). Passes UL and TUV finger proof design standards.



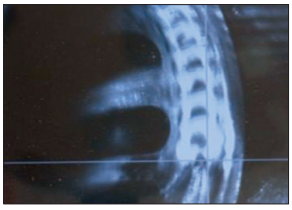
**Additional benefits of the Amphe-PD™ product include:**

- Low cost, 100% molded housings
- Integrated latching mechanism
- Easy, Tool-less assembly
- Low Insertion Force
- High Reliability
- High Cycle Durability
- High Ampacity
- Tactile and audible locking
- Proven metal clip contact retention on receptacles
- TPA device on plug to insure socket locking



## The Future of RADSOK® R4 Technology

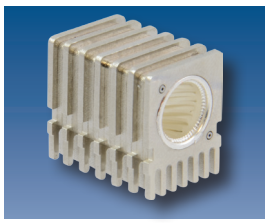
The R4 version of the RADSOK® represents the culmination of three years of research and development in laser welding copper based alloys. This innovative approach to construction of the RADSOK® cartridge provides benefits previously unavailable in the product line.



- Packaging restraints are reduced due to a smaller outside diameter of the component
- Automated assembly processes result in less manufacturing variability
- Better consistency in performance
- Better mechanical strength in a welded assembly
- Lower voltage drop/resistance
- Low temperature rise

## RADSOK® RadFin™

**RADSOK® RadFin™** was designed to address the need for amperes greater than 100A while maintaining a small footprint for PCB applications. Another unique feature of the RadFin™ is its ability to act as a great heat dissipating connector. This dramatically helps reduce T-rise with minimal air-flow required.



- 100A to 300A
- Small form factor, 6.0mm, 8.0mm & 10.0mm
- Also offered with a plastic protective cover and male pin
- Solder tail (Press fit optional)
- 1000A surge – 2 seconds
- Operating temperature can meet -40C to +125C
- Dielectric withstanding voltage is 2000 Vac RMS
- Insulation resistance can meet 5000 M Ohms
- 500 mating cycles – minimum
- Insertion force : Max 7 lbs.; Separation force: Min 1.5 lbs.
- UL94-V0 (self extinguishing)

## RADSOK® RADLOK™

Utilizing Amphenol's latest **R4 RADSOK® Technology**, our RADLOK™ product line was designed to be compact and robust. Power Interconnect products in today's market often require additional mounting hardware (e.g. washers, clamps, bolts, nuts, etc.) making them prone to costly labor expenses for installation and routine maintenance. Paired with Amphenol's RADLOK™ PIN, the single finger operation lock feature allows end users to connect any power distribution/ storage system in a quick and secure manner. The RADLOK™ product line is the answer to industries where a custom, reliable, easy to install, rugged, and cost effective solution is required.

- Voltage Rating: 1000V
- Current Rating: 70A - 400A
- Tool-Free Mechanical Locking
- High cycle durability (500 mating cycles)
- RoHS complaint
- Available in Black, Red, Orange (custom colors available upon request)

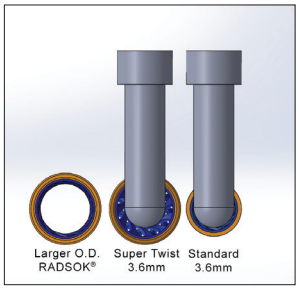
***Technical Data***

| | |
|---|---|
| **DC Voltage Rating** | 1000V |
| **DC Current Rating** | 70A - 400A |
| **Flammability Rating** | UL94 V0 |
| **Operating Temperature Range** | -40° C to 125° C |
| **Mating Cycles** | 500 |

## RADSOK® Super Twist

**Design Background**

The RADSOK® Super Twist contact was developed to enable greater radial misalignment tolerance, or "float," in drawer and blindmate applications. Greater radial gatherablility is achieved in the Super Twist (ST) contact by adding additional "twist" to a larger RADSOK® contact. Using a larger O.D RADSOK® creates additional I.D clearance for the mating male pin while maintaining electrical and mechanical performance.



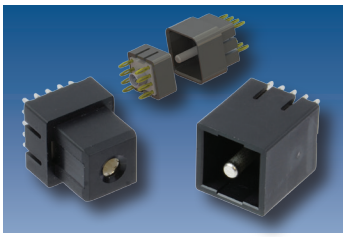

**Benefits of using Super Twist RADSOK®**

Radial misalignment tolerance is significantly increased, 3x more than standard RADSOK® contacts. The RADSOK® Super Twist contacts are used in applications where mechanical system tolerance is difficult to control in manufacturing and/or assembly, for example, mating multiple positions on a bus bar with poor true positioning to a PCB or pluggable power supply assembly.

***Super Twist RADSOK® Offerings***

| RADSOK® SIZE (mm) | Current Rating Industry Spec | Radial Tolerance mm (Max) | Radial Tolerance inch (Max) |
|---|---|---|---|
| 2.4 ST | 35A | 0.37mm | .014" |
| 3.0 ST | 60A | 0.37mm | 0.14" |
| 3.6 ST | 70A | 0.67mm | .026" |
| 4.8 ST | 100A | 0.55mm | .021" |
| 5.7 ST | 120A | 0.65mm | .026" |

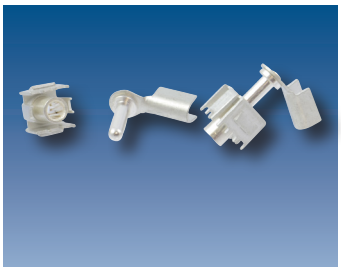
## RADSOK® RadStack™



**RADSOK® RadStack™** was designed to address the need for high current and small foot prints for PCB mezzanine applications.

- 35A to 120A
- Low-profile, 10mm to 50mm in any size increment
- Press fit attachment 35A to 120A
- 1000A surge – 2 seconds
- Operating temperature can meet -40C to +125C
- Dielectric withstanding voltage is 2000 Vac RMS
- Insulation resistance can meet 5000 M Ohms
- Mezzanine heights from 10mm+
- 500 mating cycles – minimum
- Insertion force : Max 4.5 lbs.; Separation force: Min 0.62 lbs. (Each pin )
- UL94-V0 (self extinguishing)

## RADSOK® PowerBlok™ WTB (Wire to Board)



- 35A rated single point of contact
- Low profile right angle exit less than ½ inch mated height
- 12-14 AWG crimp contact with insulated housings
- Board receptacle part number: 10-707991-000
- Wire applied right angle pin with latching housing part number: 10-729455-000

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HKA -10.2013

ООО «ЛайфЭлектроникс» “LifeElectronics” LLC

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

*Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.*

*С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров*

*Мы предлагаем:*

- *Конкурентоспособные цены и скидки постоянным клиентам.*
- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
- *Доставку товара в любую точку России и стран СНГ.*
- *Комплексную поставку.*
- *Работу по проектам и поставку образцов.*
- *Формирование склада под заказчика.*

- *Сертификаты соответствия на поставляемую продукцию (по желанию клиента).*
- *Тестирование поставляемой продукции.*
- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

*В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.*

*Конструкторский отдел помогает осуществить:*

- *Регистрацию проекта у производителя компонентов.*
- *Техническую поддержку проекта.*
- *Защиту от снятия компонента с производства.*
- *Оценку стоимости проекта по компонентам.*
- *Изготовление тестовой платы монтаж и пусконаладочные работы.*

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