Amphenol®

Power & Signal

Military & Aerospace

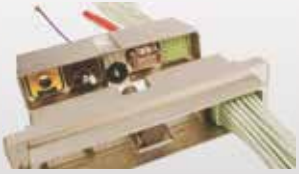
Power & Signal

Circular

Rectangular

Board Level

PCB / Flex



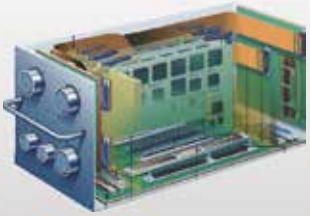
Modular

Distribution Solutions

Attachment Systems

Heavy Duty

Plastic



Custom Solutions

Cable Assemblies

Amphenol's founder Arthur J. Schmitt discovered that insulating plastic could be more effectively used to produce radio tube sockets than brittle Bakelite

**Amphenol is born (1932).*

Circular Connectors

- MIL-DTL-5015
- MIL-DTL-26482
- MIL-DTL-38999
- MIL-DTL-26500
- MIL-DTL-83723
- MIL-DTL-55181
- MIL-DTL-22992
- MIL-DTL-55116
- 7 & 10-Pin Waterproof Breakaway Connectors
- Digital Network Solutions
- Filter Connectors
- Breakaway Fail-Safe Lanyard Release Plug Connectors
- Hermetic Connectors
- M12 Hermetic Miniature Connectors
- Rack & Panel RNJ
- PCB Connectors
- Apex Galley Connector, Circular
- M-SBC Series (Subsea Booted Connector)
- VG Series Connectors
- GCB-M Modular Reverse Bayonet Connectors
- Power Connectors
- AGE96929 (VG96929 Specification) Connectors
- Ex-Proof (Atex) Solutions
- Fiber Optic Solutions
- High Speed Solutions
- 2M Micro-38999
- Miniature Terrapin
- Stingray Magnetic Connector Series
- Pegasus Series
- Bantam Micro Bayonet Connectors
- Backshells

Through participation in the war effort Amphenol establishes itself as a premier technology driven interconnect and cable company. The 5015 AN series connector is born and is soon known as the "Amphenol Connector" by military maintenance crews. The B-29 Super Fortress contains over 1600 Amphenol connectors. Amphenol's Sidney, NY facility is designated a site of national importance and is defended from air strikes.

MIL-DTL-5015

Amphenol MS and 97 series are two series of thread-coupled connectors designed to meet the operating requirements of MIL-C-5015. Available in a variety of styles and classes, these connectors are primarily used in a range of military and industrial applications where specific degrees of environmental protection are required.

Amphenol Aerospace's MIL-DTL-5015 with crimp rear release contacts provides an alternative to the older MIL-C-5015 solder type. It bridges the gap between an old connector standard and the high performance needs of current technologies.

MIL-DTL-26482

Amphenol MIL-C-26482, Series I Connectors are miniature circular connectors with three-point bayonet-coupling and five-key polarization, solder type, British standard 62GB, Amphenol form PT, Amphenol low cost form 62IN, these connectors are widely used in applications calling for quick disconnect connectors.

Amphenol MIL-C-26482, Series 2 Connectors are bayonet-coupling type, and they feature crimp contacts that are rear insert able and rear releasable. They can be ordered through Amphenol, by military or equivalent proprietary part numbers.

MIL-DTL-38999

MIL-DTL-38999 Series III Connectors offer the highest performance capabilities for both general duty and severe environment applications, both in original MIL specified and Amphenol coding TV/CTV series with threaded coupling, scoop-proof features. Al alloy, composite, stainless steel, marine bronze, durmalon and RoHS versions available.

MIL-DTL-38999 Series I LJT - Series II JT
were developed to meet the needs of the aerospace industry, and provided the impetus for development of the MIL-C-38999 specifications. Dependable 5 key/keyway polarization with bayonet lock coupling is incorporated to aid and assure positive mating.

SJT connectors combine unique design features of the scoop-proof LJT series within standard mounting dimensions of JT types. Available in a wide range of shell sizes, finishes, insert arrangements and accessories.

MIL-DTL-26500

High quality and dependability are the earned reputations of the Amphenol®/Pyle® Series of connectors designed to meet the specification requirements of MIL-DTL-26500. Serving such diverse fields as avionics, missile systems, aircraft general-purpose applications, aircraft engines and firewalls.

MIL-DTL-83723

Matrix MIL-DTL-83723 series provides many choices within the range of a medium sized, environmentally resistant circular connector. With three coupling style choices- bayonet, threaded and quick-disconnect - the versatility of this family makes it increasingly popular for panel mount, box mount and line-to-line applications in aircraft. For general duty environmentally resistant requirements, this family of connectors provides a wide range of interconnection solutions.

The Amphenol/Pyle® MIL-DTL-83723*, Series III Connectors were developed for the higher operating temperatures inherent in today's high performance aircraft and aircraft engines.

MIL-DTL-22992

The Amphenol 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.

MIL-DTL-55181

Amphenol MW series power connectors are MIL Qualified & listed in QPL & meets the requirement of MIL-DTL-55116.

MW series power connectors are with center lock coupling screw, waterproof & polarized. Connectors used for interconnection of power & control circuit electric equipment specially in U.S. Army Communication System.

These connectors are designed to withstand high shock & vibrations ensured with center locking screw mechanism.

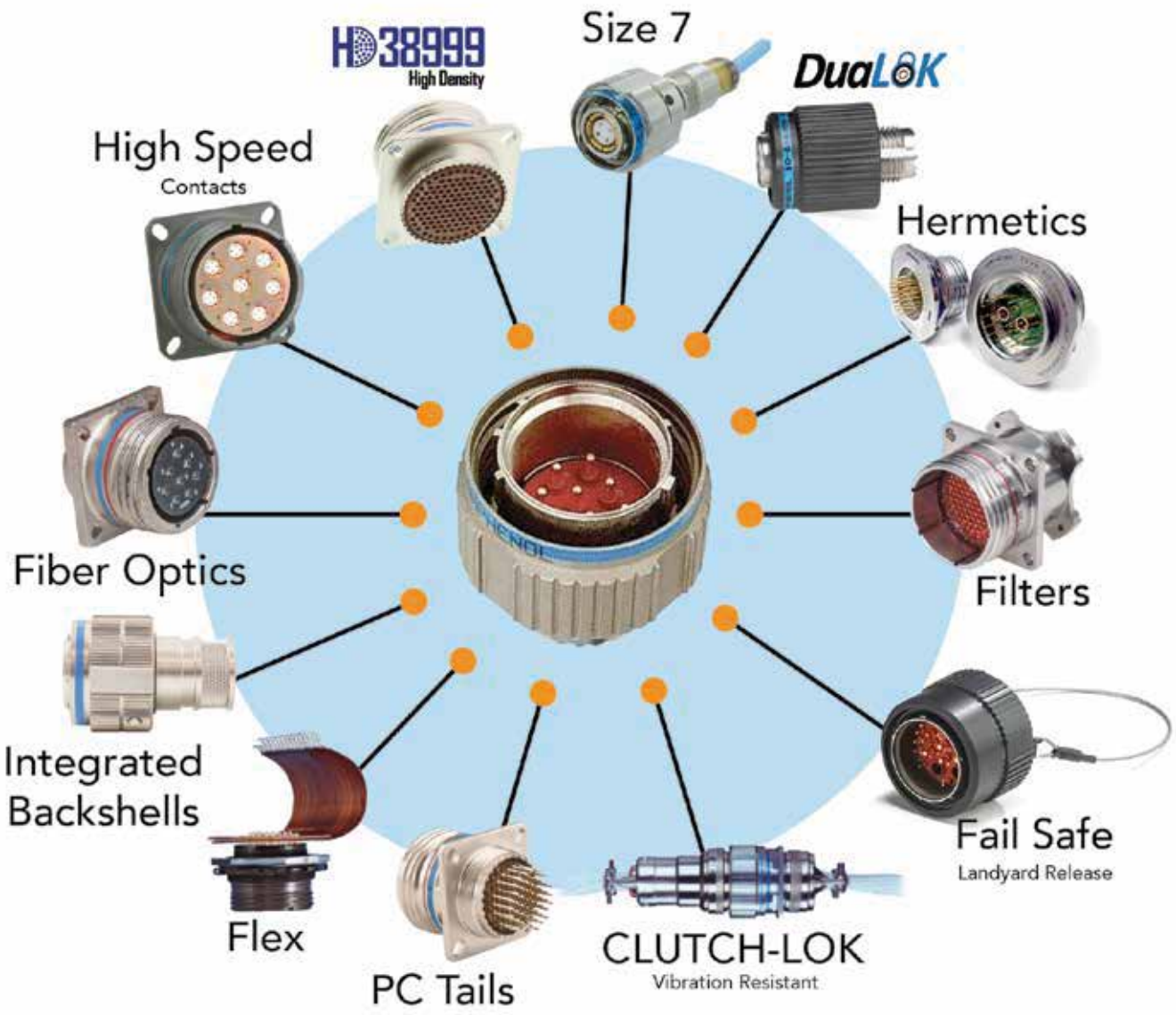
MIL-DTL-55116

These connectors are water resistant, polarized, five and six contact electrical connectors for use in low voltage audio frequency circuits and applications. They employ three-point bayonet coupling for quick disconnect and self - wipe contact. Although designed for use in communications equipment, these versatile connectors, have been successfully adapted for use in numerous industrial, scientific and educational applications.

These connectors are qualified to MIL-DTL-55116, Amphenol form 164 Series.

MIL-DTL-38999 Series III Derivatives

Series III, TV Tri-Start Connectors, offer more versatility & options than any other interconnection family!



C4ISR | Military Aerospace | Navy | Commercial Aerospace | Missiles & UAVs | Ground Vehicles & Battlefield | Industrial

7 & 10-PIN WATERPROOF BREAKAWAY CONNECTORS

Amphenol is the leader in watertight, breakaway connectors designed to meet severe environmental conditions. Our connectors, which are watertight in up to 6 feet of water, have molded-on wiping-action contacts that provide a self-cleaning feature and eliminate issues with pin/socket open contacts. The 7-Pin and 10-Pin connectors are designed for multiple cable diameters, are available in shielded versions, and can include either solder-type contacts of insulation-piercing contacts, which are field replaceable. Many of the 7- and 10-pin Connectors also come in a miniature versions that is 50% smaller than the standard connector. All standard connector options are also available in the miniaturized versions.

- Push-pull breakaway/Quick-disconnect
- Up to 5,000 mating cycles with standard versions (3,000 cycles with miniaturized versions)
- 2 amps max per contact
- Panel-mount plugs and receptacles available

DIGITAL NETWORK SOLUTIONS

Amphenol provides Ethernet Network Solutions for use in harsh environments, where reliability and resistance to outside influences, such as temperature, shock, vibration, water, dust, etc. are paramount.

Our rugged and durable solutions give you the insurance of a continuous and secure data transmission between all your communication devices in the harshest environments. All Amphenol's RJ-Switch products are tested and certified by an external accredited laboratory.

Amphenol Ethernet switches feature 8 to 28 ports with rugged connectors to interconnect terminal devices within armored vehicles, such as rugged PCs, screens, radios, with high data transmission (up to 10 Gbps). Designed to operate in armored vehicles and other harsh environments, our Ethernet switches feature mechanical packaging enhancements designed for MIL- STD-810F airborne and ground environmental compliance and high reliability.

The units have been especially hardened to improve waterproofness, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through MIL-D-38999 circular or RJ Field connectors.

FILTER CONNECTORS

Amphenol® EMI/EMP Protection Connectors offer the versatility of standard connectors with EMI/EMP protection for sensitive circuits. Internal housing of the EMI/EMP devices eliminates costly and bulky exterior discrete protection devices. Virtually all major MIL-Spec circulars can be incorporated with filter devices:

- MIL-DTL-38999
- MIL-DTL-5015
- MIL-DTL-26482
- MIL-DTL-27599
- MIL-DTL-83723
- MIL-DTL-26500

BREAKAWAY FAIL-SAFE LANYARD RELEASE PLUG CONNECTORS

Amphenol Tri-Start Breakaway Fail Safe Connectors provide unequaled performance in environments requiring instant disengagement. Designed to provide quick disconnect of a connector plug and receptacle with an axial pull on the lanyard. The “Breakaway” Fail Safe connector family offers a wide range of electrical and mechanical features.

- Instant decoupling and damage free separation
- Completely intermateable with standard receptacles (D38999/20 and /24)
- Inventory support commonality through the use of standard insert arrangements and contacts
- Solid metal-to-metal coupling
- EMI grounding fingers
- Conductive finishes

HERMETIC CONNECTORS

Amphenol offers superior electrical performance plus the rugged design of a glass-sealed or epoxy-sealed connector. Amphenol glass-sealed hermetic connectors are available in a wide variety of MIL-Spec and custom configurations. Amphenol epoxy-sealed connectors are a lightweight alternative to glass-sealed hermetic connectors.

- Hermetic: Leak rate of 1X10-7 cc He/sec or less
- Epoxy-Sealed: Leak rate of 10X10-5 cc He/sec or less
- Fused glass hermetic insert in stainless steel shell
- Same epoxy as used on EMI filter connectors
- Custom designs available

Amphenol offers hermetic connectors tailored specifically to your requirements, providing seals able to withstand pressures of up to 60,000psi (4,100Bar), temperatures up to 1,000°C (1832°F) and for use in aggressive and hostile environments.

M12 HERMETIC MINIATURE CONNECTORS

M12 Hermetic Connectors are miniature threaded, hermetically sealed connectors that are designed to meet and exceed the mechanical and environmental requirements IEC-61076-2-101 with fixed pin contacts, fused into a glass dielectric insert. M12 Series available as receptacle with eyelet, solder bucket and/or pcb contacts. M-M12 connectors are designed to exceed IP68 in an unmated state. These connectors have a wide variety of applications and can be found in most industry sectors, such as transport and instrumentation, for use with proximity switches, sensors and interconnection in harsh environmental conditions.

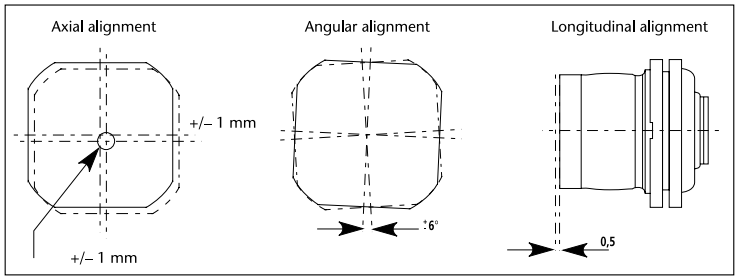
RNJ

Rack and panel cylindrical connectors

The RNJ series rack and panel connectors are used to connect electrical and optical devices between a moving unit (rack) and a fixed unit (panel) without any coupling / uncoupling device.

This function is ensured by a system of moving and the fixed units. The connectors are built to allow for design tolerances (up to the limits shown in figure 1) during the mating of the connectors and the final locking of the moving and fixed units.

These connectors are derived from the LJT series and meet or exceed the MIL-DTL-38999 Series I requirements.



RACK & PANEL RNJ

Rack & panel connection Floating system which provides correction and adjustment to misalignment problem between plug and receptacle during mating. Derived from MIL STD 38999. Large number of inserts available to accommodate signal and power contacts: 7 shell sizes and up to 128 contacts. Version for power application: 1 contact of 230A or 4 contacts 100A.

PCB CONNECTORS

Amphenol provides circular connectors with PC Tail contacts for solder mounting on printed circuit boards. They are available in MIL-DTL-38999 Series I, II, and III, MIL-DTL-26482, and MIL-DTL-5015 Connectors. These connectors incorporate PCB contacts in sizes 16, 20, and 22D.

- Lightweight, compact, high density and high reliability cylindrical
- Operating voltage to 900 VAC (RMS) at sea level
- Environmentally resistant
- Solder or crimp rear release contacts in mating plug
- Press-fit compliant pin contacts also available

M-SBC SERIES (SUBSEA BOOTED CONNECTOR)

Subsea Booted Connector has been developed for mission critical subsea and downhole instrumentation applications. The push on key located boot-plug and receptacle design allows on-site or workshop harnessing using simple hand-held crimp tools.

- Booted plug provides an alternative to hard wiring ideal for applications requiring periodic maintenance.
- Boot provides a robust and reliable retention of plug to the receptacle, suited to harsh environments.
- Field Installation.
- 15 Kpsi (1,000 Bar) pressure tight hermetic glass sealed receptacle.
- Weld mountable receptacle or custom housed.
- Seawater-tight boot with individual pressure energised wire seals, no need for gels or grease.
- Crimp contacts for 22 AWG wire (field installed or factory preassembled)

APEX GALLEY CONNECTOR, CIRCULAR

The APeX Galley Connector, Circular is designed specifically for legacy and new galley systems. It was tested to MIL-STD-1344 connector and EN 2591 contact standards. Highly reliable and easy to use, it is also interchangeable and intermateable with other pre-existing equipment in the field.

- Intermateable and Interchangeable - Ability to mate with other pre-existing equipment in the field
- Versatility - Crimp termination connection system with 3 Power (10 AWG) & 3 Control (16 AWG)
- Blind-Mate Connection - Designed with a key feature to enable quick and simple mating
- Highly Reliable and Durable - Tested to MIL-STD 1344 and EN 2591 standards; high frequency mating
- Many Choices - Configurable to PCB contacts; plating options available
- Intuitive and Ergonomic - Smooth, low insertion force to mate connector

Reduced Flange

38999 Jam Nut Receptacles

Derived connectorfrom MIL-DTL-38999 Series III

Standard

Reduced

- Derived from MIL-DTL-38999 series III version
- For Jam Nut Receptacles (TV07/TVS07)
- Higher density on panel **41% average footprint surface reduction**
- Lighter: **30% average lighter than standard 38999 stand off receptacle**
- Mates with standard MIL-DTL-38999 series III plugs and caps
- Matches MIL-DTL-38999 series III performances
- Available in Crimp version, with PC Tail contacts, and in Stand Off version
- Reduced Flange Deviation (to be added at the end of your part number):
  - **F312** for Crimp and Standard PC Tail versions (F311 with safety castle nut*)
  - **F059** for Stand Off PC Tail versions (F058 with safety castle nut*)

FOOTPRINT SAVING

Average 41% footprint reduction:

Shell Sizes	38999 standard diameter ØA max (mm)	38999 Reduced Flange (F312 & F059) diameter ØB max (mm)	Footprint reduction 38999 Standard vs 38999 Reduced Flange
9	30,5	22,1	47%
11	35,2	25,1	49%
13	38,4	28,1	46%
15	41,6	32,1	40%
17	44,8	36,1	35%
19	49,5	38,1	41%
21	52,7	41,1	39%
23	55,9	44,1	38%
25	59	48,1	34%

WEIGHT SAVING

Average 30% weight reduction:

Example:

38999 Series III stand off version:
TV07WCI13-35P F459 = 31.46 g

38999 Series III Reduced flange stand off version : TV07WCI13-35P F059 = 19.49 g

> The #13 Reduced flange stand off version is 38 % lighter than 38999 Series III standard stand off version.

PANEL DIMENSION

Size	B 0 -0,25	ØC +0,25 0	ØG +0,1 0	ØH +0,1 0
9	16,7	17,6	17	16
11	19,59	20,96	20	19,1
13	24,26	25,65	23	22,3
15	27,56	28,83	27	25,5
17	30,73	32,01	31	29,3
19	33,91	35,18	33	31,9
21	37,08	38,35	36	35,1
23	40,26	41,53	39	38,3
25	43,43	44,7	43	41,5

For dimension B, size 9 only, tolerance is +0,10 / -0,06

VG SERIES CONNECTORS

VG95328 connectors are qualified to the American MIL-DTL-26482 series I standard in crimp, solder, wire wrap, PCB versions, with different sealing levels which are well known in aeronautics, military and industrial applications.

VG95234 connectors are qualified to MIL-C-5015 with reverse bayonet coupling.

VG95319-1006, VG95319-1007, VG95319-1008 connectors are qualified to MIL-DTL-38999 series III with Metal Shells-Aluminum, Stainless Steel, Class K Firewall.

The VG95319-1011 backshells provide a range of popular backshell styles in straight or 90 degree form, to accommodate heat shrink boots, EMC screen termination with band and cone termination for EMC screening braid or non-metallic cable protection braid.

GCB-M MODULAR REVERSE BAYONET CONNECTORS

Reverse Bayonet Modular connector GCB-M, per VG95234, housing size 32, to take up to 4 modules as per EN4165 for contacts: AWG 23- AWG8, FO contacts (MTP, MPO), RJ45, coax-, Quadrax contacts. More than 230,000 various pole arrangements possible.

- Temperature deployment range: from -65° to +150°C Cadmium
- Nickel
- Black-Zinc-Nickel

AGE96929 (VG96929 SPECIFICATION) CONNECTORS

Single pole power connectors with high power at low voltage. Meets requirement of VG96929 Standard Current Rating 225- 950A

Military vehicle & Industrial Equipment, EV application

POWER CONNECTORS

Amphenol offers a wide range of cylindrical products for use in high power, high amperage applications. From ground systems and shipboard power to military vehicles and heavy equipment, Amphenol has the connector you need to power your system. In addition, we'll continue to design new connectors to meet the latest power needs. All major circulars can be incorporated with power RADSOK contact technology.

- MIL-DTL-38999
- MIL-DTL-5015
- MIL-DTL-26482
- MIL-DTL-22992
- GT Power
- 97 / 97B Power
- VG Power
- EV Power

EX-PROOF (ATEX) SOLUTIONS

Certain hazardous environments, including those found in oil & gas exploration, petrochemical plants, fuel storage sites, and pharmaceutical and food manufacturing, require explosion-proof or ATEX-rated connectors. ATEX connector lines Amphe-EX and Star-Line EX, which are suitable for Zone 1 and Zone 2 hazardous areas, as well as provides the cable assembly. ATEX connector lines Amphe-EX, Star-Line EX, RJ Field, which are suitable for Zone 1 and Zone 2 hazardous areas, as well as provides the cable assembly.

Star-Line Series "ZP/ZR" connectors are heavy duty environmentally sealed plugs and receptacles and have been successfully used in all types of Industrial and Aerospace applications. These compact environmental connectors have provided outstanding performance in complex ground support cable networks, automatic and process control systems and instrumentation systems. These connectors combine electrical and mechanical capabilities that equal or exceed the performance parameters established by the Military Specification MIL-5015.

The new Amphe-EX™ is complimentary to Amphenol's industry-proven Star-Line EX™ and has miniature, explosion-proof threaded connector specifically designed to allow a signal to pass through Zone rated areas using coax, fiber optic cables, or standard copper.

Amphenol offers RJ 45 and USB insert options available in rugged form both for Zone-1 and Zone-2.

In its ATEX certified facilities Amphenol can supply a complete cable assembly solution.

FIBER OPTIC SOLUTIONS

Amphenol offers a wide range of fiber optic interconnect solutions for use in the harsh environments found in military and aerospace applications. From multiple fiber optic termini options to connectors to custom cable assemblies, Amphenol can provide solutions for virtually any fiber optics need.

Amphenol has established the rugged and reliable MIL-DTL-38999 as a common connector shell platform that houses a wide variety of fiber optic termini including MIL-PRF-29504 commercial equivalent, HDF20, ARINC 801 and MT ferrules.

Please see "Amphenol Fiber Optics" catalogue for detailed information.

HIGH SPEED SOLUTIONS

The High Speed Solutions group is one of the fastest growing and most technologically advanced groups within Amphenol. Everyday, the High Speed Solutions team is developing custom connector and cable solutions for High Speed Copper, Fiber Optic, and Integrated applications. As a basic business philosophy, the team is dedicated to concentrating on those advanced and challenging market segments that demand an extraordinary level of supplier support and reaction. Amphenol High Speed Guide is based on the following Protocol Guide:

- Ethernet 10Base--T
- Gigabit Ethernet 1000Base--T
- 10 Gigabit Ethernet 10GBase--T
- USB 2.0 - USB 3.0
- DVI
- Display Port 1.0 - Display Port 1.2
- SATA 1.0 - SATA 2.0 - SATA 3.0
- HDMI

Please see "Amphenol RF Solutions" and "Amphenol Fiber Optics" catalogue for detailed information.

MINIATURE TERRAPIN

Amphenol Terrapin is a miniature series of circular push--pull connectors. Within a rugged shell design Terrapin offers superior EMC performance and is sealed to IP68. Resilient in severe battlefield situations the RoHS compliant black-silver plating is both low--lustre and corrosion resistant. Featuring an optional locking mechanism, multiple shell sizes with up to 37 contacts and suitability for over-moulding, Terrapin is the preferred choice for miniature connectors in military and other harsh environment applications.

2M MICRO-38999

Amphenol 2M Micro--Miniature Connector Series product line is designed for interconnect applications requiring high performance and reduced size and weight. This smaller, high density, lightweight connector far exceeds the competition in quality and performance levels. The 2M Series is a superior and versatile connector designed and tested to mil-spec standards, comparable to MIL-DTL-38999. 2M is intermateable with Glenair's Mighty Mouse the test results are available in the Technical Documents area.

STINGRAY MAGNETIC CONNECTOR SERIES

This series offers low profile, compact, sealed connectors that withstand exposure to rain, dust, dirt and chemicals. Stingray connectors are intedended for First Responders, Security and Military personnel.

Stingray features a magnetic, non-keyed mating system which allows the connector to be easily mated without the need for pre-alignment and eliminates the need to operate any coupling mechanisms. The low profi le Stingray connector sits fl at against the body to prevent snagging & damage. It is self-aligning due to the strong magnetic connection, and allows customisation and fl exibility of cable routing as the cable can be rotated through 360° when the connector is mated.

Features:

- Magnetic mating mechanism
- Non-keyed rotatable mating
- Wipe clean interface featuring sprung-loaded contacts 5000+ mating cycles
- Compatible with USB 2.0, Ethernet and Audio signal requirements
- Last mate contact
- 90° Cable exit within the height of the connector
- IP68 sealed (mated and unmated)

Amphenol
Turkey&MiddleEast

OUR SMALLEST CONNECTORS

FOR YOUR MOST IMPORTANT JOBS

2M
Micro38999

TERRAPIN

PEGASUS

Micro-D

HD38999
High Density

HD SIM

µCom

MRC
Ruggedized

Intended for harsh environment applications and used extensively in soldier communications, Amphenol Terrapin is a miniature series of circular push-pull connectors. Within a rugged shell design Terrapin offers superior EMC performance and high environmental sealing to IP68. Resilient in severe battlefield situations the RoHS compliant black-silver plating is both low-lustre and corrosion resistant. Featuring an optional locking mechanism, multiple shell sizes with up to 37 contacts and suitability for overmoulding, Terrapin is the preferred choice for miniature connectors in military and other harsh environment applications.

TERRAPIN

Miniature Rugged Connector Series

Amphenol
Turkey&MiddleEast

www.amphenol.com.tr
sales@amphenol.com.tr

PEGASUS SERIES

The Pegasus Series is one of Amphenol's latest innovation in small, lightweight, rugged connectors. Designed for use in harsh environments, Pegasus builds on the successful Luminus Aerospace connector with the addition of EMI shielding. EMI shielding is provided by electroless copper and nickel plate, with a copper alloy spring finger gasket to ensure shell-to-shell conductivity. Tests show between 60db and 40db of attenuation, depending on frequency. This combination of lightweight, small size, and EMI shielding makes Pegasus the ideal choice where protection against ambient noise transients, or suppression of emitted noise is required, and space and weight are at a premium.

BANTAM MICRO BAYONET CONNECTORS

Bantam is a high performance circular connector product range developed for aerospace applications where electrical performance must be met with affordability. High mating cycles along with excellent shell-to-shell electrical bonding for EMI are the benchmark of rugged connectors. Bantam provides the solution that meets your budget and performance goals. Amphenol has filled the gap between the most ruggedized military grade connectors and the consumer grade connectors with Bantam. Bantam utilizes a robust triple bayonet coupling mechanism along with an internal EMI ground spring to provide excellent shell-to-shell conductivity. Various mounting options are available including in-line and 2-hole flange mount configurations. Bantam meets the RoHS and EWIS requirements for the aerospace cabin environment.

BACKSHELLS

Complete range of backshells for all circular connectors is now available from Amphenol now. These backshells are QPL certified to AS85049 standard and any variants of the same could be supported in short lead-time. The full technical details are available from the exclusive website www.backshellworld.com.

In ground and naval application the robustness and the environmental sealing may be more important, where as weight may be prime consideration for space and Aerospace application. Amphenol backshells are available in different types for variety of applications.

- Non-Environmental Backshell
- Environmental Backshell
- Non Environmental EMI/RFI Backshell
- Environmental EMI / RFI Backshell
- Shrink Boot Adapter
- Shrink Boot Nut
- Band Lock Adaptor
- Crimp Adaptor/Ring Backshell
- Quick Clamp
- Strain Relief
- Grommet Nut Backshell

Amphenol
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www.amphenol.com.tr
sales@amphenol.com.tr

With the widest range of circular connectors conforming to most Military (MIL) specifications in the product portfolio, Amphenol retains its undisputed leadership in these categories of products. **Backshell** is an integral part of any Circular connector when it comes to reliable cable connections. It is only logical for Amphenol to offer full range of **Backshells** as it creates newer values for our esteemed customers.

PROTECTIVE CAPS

For any receptacle, we have a cap solution

RoHS COMPLIANT

Protect your plugs and receptacles against dust, water, moisture, EMI.

Protective caps for:

- **38999 Series I, II, III (MIL-DTL-38999/EN3645)**
- **26482/PT/451 Series (MIL-DTL-26482)**
- **RJ Field & USB Field**

...with **many benefits**:

- **Time & Cost Saving** with quick delivery (4 weeks max)
- **A large range of caps & receptacles** with Black Zinc Nickel and QPL qualified plating available

Rubber Standard Caps
(for 26482 & 38999)

NEW

Composite Self-Closing Caps
(for 26482)

NEW

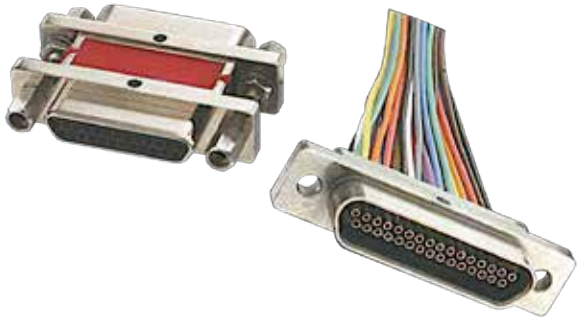
Metallic Standard Caps
(for 26482 & 38999)

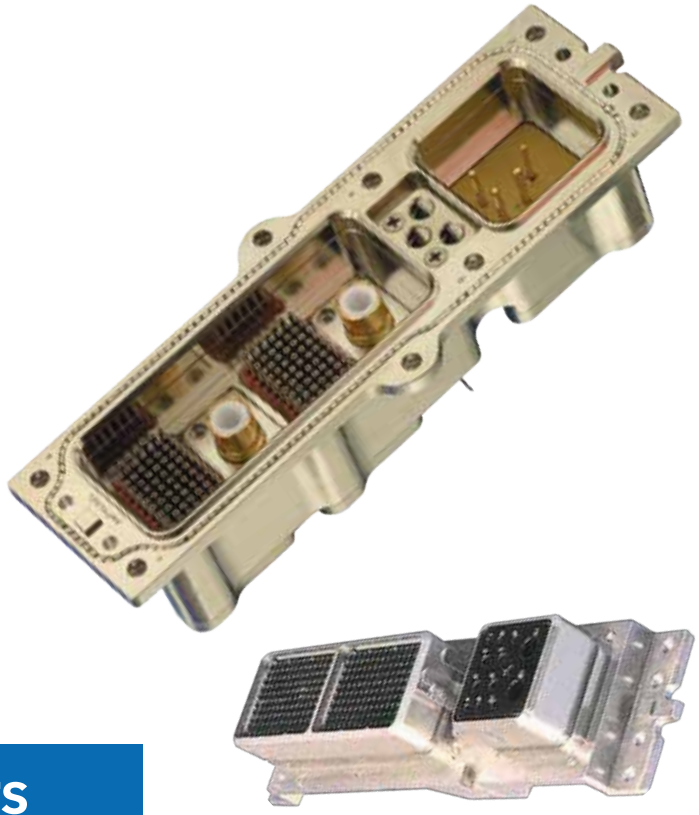
Metallic Self-Closing Caps
(for 38999)

COMING SOON

Amphenol Turkey&MiddleEast

www.amphenol.com.tr
sales@amphenol.com.tr





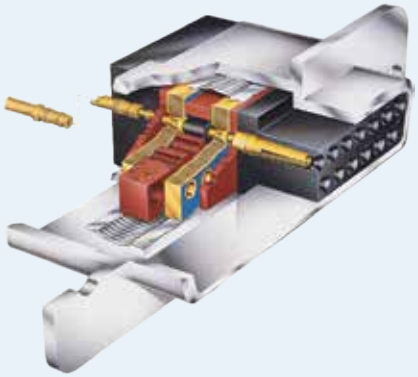
Rectangular Connectors

- ARINC 404
- ASR Connectors
- ARINC 600
- R39 - Rectangular 38999
- R27 - MIL-DTL-83527
- R58 - MIL-DTL-83733 & JN1122
- Brush Rack & Panel Connectors
- EN3545 / 1900 Connectors
- RFM SERIES - Modular Floating Racks
- MIL-DTL-24308 D-SUB
- M83513 - MICRO-D
- MMA - Blind Mate
- RMM Rectangular Modular Micro Series

Advantages of Filter Connectors:

The integration of the filter elements into the connector, rather than a board level solution, results in many advantages to the user:

✓ Reduction in space and weight
✓ Reduction in inspection and assembly labour
✓ Improved high frequency EMI performance by elimination of parasitic effects associated with board level filters
✓ Superior shielding effectiveness



ARINC 404

Amphenol's "AR" Series, ARINC rack and panel ARINC 404 connectors meet or exceed MIL-C-81659 and ARINC Specification 404. The "AR" Series is a multi-purpose connector used in aerospace, military and computer periphery applications.

These connectors are available in five shell styles with up to four insert cavities. Inserts in this product line accommodate signal and power contacts in sizes 12, 16,20 and 22. Coaxial contacts are available in sizes 5 and 9. Insert arrangements are available utilizing a single type contact or a combination of standard and coaxial contacts.

Non-environmental and environmentally sealed connectors are offered. The environmental sealing is accomplished by wire sealing grommets and interfacial seals. Application specific designs, including transient protection, are available from Amphenol.

ASR Connectors

The ASR connector is a compact and easy to use interconnect where shielding, sealing, and space / weight-saving are prime requirements. ASR connectors use MIL-C-39029 contacts, feature a snap-locking mechanism and are available in both male and female versions, as well as with PCB or crimp contacts. Fully Reach / RoHS compliant and conform to ABD0031 and FAR 25853 (Fire, Smoke and Toxicity), the ASR series is perfectly suited for in-seat systems, as well as cabin service systems and in-flight entertainment systems.

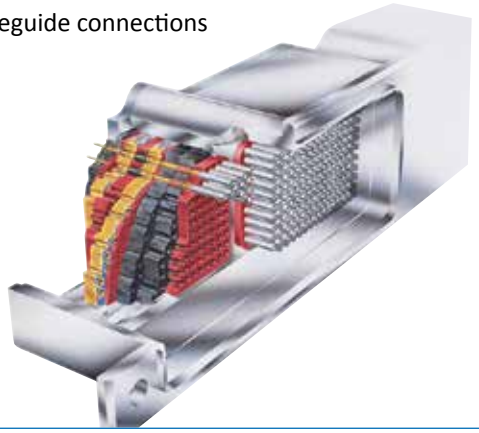
ARINC 600

ARINC 600 Connectors are a recognized standard rack and panel connector for aircraft applications. The ARINC 600 is the successor to the ARINC 404 for many of the new avionic designs. Compared to the ARINC 404, the ARINC 600 features lower mating force contacts, increased contact count and a front release, floating keying system.

Amphenol's extensive product offering will meet the most demanding needs of our customers. At the design-in stage, Amphenol's sales engineers will work with you to select a connector from our standard product line or coordinate the design of an application specific connector. Amphenol's ARINC 600 rack and panel connectors are designed to meet all relevant
ARINC 600 connector specifications.

FEATURES:

- Low insertion force contacts
- Both environmental and non-environmental versions
- Front removable keying posts
- Field replaceable inserts for size 22 and power contacts
- Up to 800 size 22 contact positions in one connector
- Crimp, coaxial, power, printed circuit, and wire wrap contacts
- Waveguide connections



R39 - RECTANGULAR 38999

Amphenol's rectangular connector soars to meet higher expectations. The R39 series provides high performance in the severe environment demands of military specifications. Its lower profile translates into a smaller space-saving footprint. It delivers the same reliable, familiar benefits found in Amphenol's 38999 circular connectors: effortless installation, blind push-pull mating, extreme durability, quick mate.

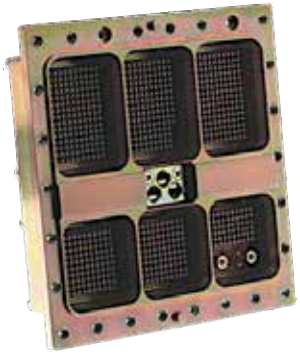
FEATURES:

- Rectangular space savings
- Low profile
- High density 127 position inserts or mixed inserts with power, RF or fibre-optic available
- Blind mate
- Rugged
- Uses same contacts as standard 38999

R58 - MIL-DTL-83733 and JN1122

The R58 series are high performance environment resistant, rectangular connectors designed to exceed the requirements of MIL-DTL-83733 and to meet the EFA requirements of JN1122.

R58 Series Rectangular Connectors are well suited for hostile military aircraft applications where environment is an issue or shielding effectiveness and corrosion resistance is mandatory.

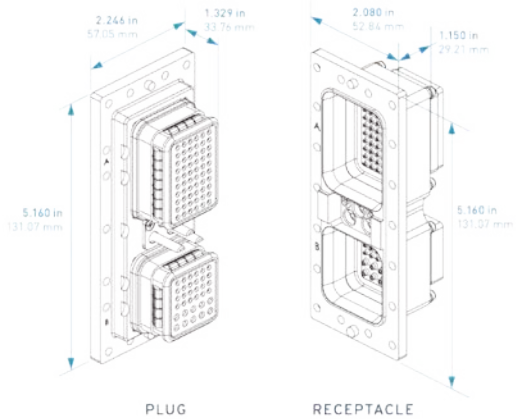


R27 - MIL-DTL-83527

The Amphenol R27 Series is a robust rectangular connector designed to meet or surpass all the requirements of the MIL-DTL-83527 specification and EN 3682European Standard. This series is particularly well suited for military and commercial aircraft applications where harsh environmental issues are a concern. Connectors, shells, inserts, termination modules and contacts are sold separately or fully assembled.

These connectors are intermateable and interchangeable with filtered and non- filtered MIL-DTL-83527 connectors. A wide range of contact arrangements are available using contact types from Fibre Optic, Quadrax, Differential Twinax, Triax, Twinax and Coax to the standard size 12, 16, 20 and 22 contacts, in crimp and PCB.

These connectors are offered in both filtered and non-filtered designs. Filtered designs incorporate Amphenol's solderless construction which reduces stress on the ceramic elements resulting in superior thermal and physical shock performance and unparalleled long term reliability. Custom designs and features such as termination modules, backshells, unique insert patterns and integral shells are also available.



BRUSH RACK & PANEL CONNECTORS

This connector series utilizes Amphenol's durable and reliable B3 contact system in a rugged, non--floating Rack and Panel connector. Included in this series are digital and power/digital "hybrid" insert arrangements. The hybrid series utilizes Amphenol's high performance RADSOK® power contacts along with Amphenol's proven B3 contact.

FEATURES & BENEFITS:

- High performance B3 brush contacts
- 0.100 inch x 0.100 inch square grid footprint
- Environmentally sealed at connector interface when mated (optional feature)
- Environmentally sealed connector mounting interface
- EMI protection is available at mounting surfaces and connector interface
- ESD protection is available – allows use of Class 3 hardened chips (4KV max. voltage)
- Tapered mating surface provides near zero X & Y plane movement between mated connectors

EN3545 / 1900 Connectors

The composite EN3545 / 1900 connectors are available in sealed or unsealed versions and exist for copper or aluminum cable contacts versions. Locking as well as keying and fixing on structure is allowed by the pin & socket polarizers, available in standard screw version, ¼ turn or Quick Lock versions. This product range offers many contact configurations, from 50 contacts gage 20 to 5 contacts gage 8 (as per MIL-C-39029 and EN3155 spec.), as well as hybrid configurations and optical versions using Elio™ Termini (EN4531-101).

RFM SERIES (Modular Floating Racks)

FEATURES:

- Plugs and receptacles with floating fixing
- Stackable modules
- Metallic modules guides
- Allows mis alignment between rack and panel : +/- 1.25 mm around the fixing screw

MAIN CHARACTERISTICS

- Blind mate, floating fixing
- High mating / unmating cycles (up to 5000)
- NF F 61-032 approved (Railways)
- Good behavior in vibrations
- Low insertion forces
- Power contacts (8,15, 25, 50, 60Amps)
- Modular : 5, 3 and 2 contacts modules with removable crimp and wire wrap contacts
- Metallic guiding pins

APPLICATIONS:

For applications demanding Density & Modularity RACK is the solution.

- Railway Racks
- Shelters
- Cabinets
- Power Racks
- Modular equipments
- Automatic assembly machines

MIL-DTL-24308 D-SUB

FEATURES:

Amphenol M2000 Series D Sub Connectors are MIL Qualified & listed in QPL & meets the requirement of MIL-DTL-24308.

M2000 Series D Sub Connectors are subminiature rack & panel type with polarized shell & having pin/socket machined contacts which provide high reliability & density for the connectors. They are used in variety of applications due to it's versatile design where weight & dimensions are constraint factor.

APPLICATION:

- Military Information System
- Aerospace Communication System
- Industrial

MMA - BLIND MATE

The MMA series is the ultimate solution to fit your needs:

- **Mini** - Compact blind mate
- **Modular** - Infinite possibilities
- **Arinc Contacts** - Proven Design

MMA combines many of the best features from popular product lines including Arinc 600's power, RF, Fiber Optic and Quadrax contacts, low mating forces and shrouded size 22 pins. Sealing capabilities are comparable to M83527 with a shell seal, face seal and grommet. Modular, removable inserts are effective for separating signal and power contacts, while providing ease of installation and customization in the field. Choose our 360° EMI spring option if shielding effectiveness is a concern. Customer specific designs lead to endless possibilities!

M83513 - MICRO-D

FEATURES:

Amphenol micro connectors provide small inter-connect solutions, which will exceed the requirements of the US military standard M83513.What differentiates Amphenol from the competition is our overall connector design. Custom solutions can easily be engineered to ensure exact performance in any application.

Amphenol is not limited to the traditional M83513 rectangular connectors but has also developed and produced circular connectors, strip line connectors,PC board connectors,and hybrid connectors utilizing power,signal,coaxial and fiber optics contacts.

RMM SERIES
(RECTANGULAR MODULAR MICRO)

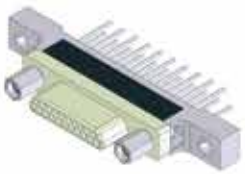
RMM Series is a low-profile, highdensity rugged connector that fills the gap between the Micro-D (MIL-DTL-83513) and D-Sub (MIL-DTL-24308) product lines. Designed to meet the harsh environments of the Aerospace, Defense and Industrial markets, the unique modular insert design allows for a wide variety of insert arrangements combining signal, power and RF contacts. Custom designs featuring Sealing, Filtering, and High Speed contacts are also available.

Features & Benefits

- Modular insert arrangements – Signal, Power and RF positions
- Expandable insert patterns - 1 to 3 rows, 2 to 120 positions
- Mixed layout options : High frequency, high power and low frequency contacts in one connector
- Lower profile than traditional Micro-D series
- Meets performance requirements of MIL-DTL-83513G

Amphenol

Microminature Products



Metal / Plastic “100, 101, 102, 104”
Solder Cup, Pre-Wired, PCB Tails

Backshells “MBS” and
Accessories “HM05, MDCE”

Integrated EMI Backshell Strip Line “105” Connector Saver

Hi-Density
Card “106”

Filter Micro
“M13”

Custom Design

Possible Configurations:

✓ Ruggedized
✓ Hi-Speed
✓ Fiber Optic & Power

Termination Options:

✓ PCB Tail Crimp
✓ Compliant Pin
✓ Flex Termination
✓ Surface Mount

Board Level Connectors

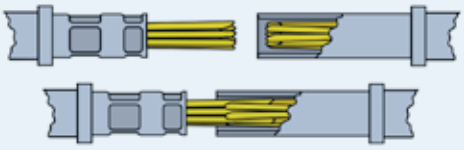
- SIHD
- HDAS
- HILINX
- SMASH
- R-VPX Ruggedized Vita 46
- Viper Connectors
- Module-R
- HE7-HE9/254
- Thermal Clamps
- LMF-Low Mating Force Rectangular M55302
- Ruggedized VME64x, VITA 60, VITA 66 Interconnects
- R-SATA
- LRM (Line Replaceable Module)
- Power to Board
- HDB3 High Density / HSB3 High Speed
- UHD Connectors with Fork & Blade Contacts
- NAFI Connectors with Fork & Blade Contacts

Amphenol is the leader in board level interconnection products through its long history of engineering expertise for product solution solving. New and innovative solutions are under development every day within the highly skilled engineering departments who are teamed with marketing product managers and production specialists.

Brush Contact Technology:

Meets the requirements of MIL-DTL-55302.

Provides high density in tight spacing, low mating/inmating forces, proven durability and long contact life.



Applications :

- Medical equipment
- IC chip testers
- Telecommunications
- Military and Commercial Aviation
- Military Ground Vehicles
- GPS systems

SIHD

FEATURES:

Monolithic staggered grid connector, with floating capability feature.

APPLICATIONS:

- Radar
- On Board Computer
- Actuator

HILINX

FEATURES:

100% modular & hybrid connector. Unique M55302 modular interconnect. System of interlocking signal, power, fiber optics & HF modules.

APPLICATIONS:

- Engine
- Power Unit
- Landing Gear
- Braking System
- Ordnance

HDAS

FEATURES:

Monolithic high density PCB interconnect. Provides higher current rate capability, and extreme withstanding to harsh environments.

APPLICATIONS:

- On Board Computer
- Display Unit
- Actuator
- Engine
- Power Unit
- Landing Gear
- Braking System

SMASH

FEATURES:

Highly robust advanced SEM E form factor connector. For the most demanding electronic packagings interconnects.

APPLICATIONS:

- Radar
- Engine
- Ordnance

R-VPX RUGGEDIZED VITA 46

Amphenol's R-VPX is a ruggedized, high-speed, board-to-board interconnect system capable of data rates in excess of 10 Gbps, meeting and exceeding VITA 46 standards. This connector system gives users modularity and flexibility by utilizing PCB wafer construction with customized wafer-loading patterns.

- Qualified to VITA 46 for Open VPX applications
- Fully intermountable and intermateable to existing VITA 46 connectors
- Meets and exceeds VITA 47 performance requirements
- Supports Ethernet, Fiber Channel, InfiniBand, and other protocols
- Modular COTS lightweight connector system
- Low mating force connector system
- Pin-Less backplane connector family
- Supports .8 inch card slot pitches
- Up to 140 signals per inch
- Contact current rating1.5 Amps
- Can be combined with high power modules, RF Modules (VITA 67) and Optical modules (VITA 66)

VIPER CONNECTORS

VITA 60 provides an alternative backplane connector system for OpenVPX™ systems. To support the VITA 60 standard, ABS developed the VIPER® connector – a powerful backplane and daughtercard interconnect platform providing 63 differential signals per linear inch. The VIPER connector has been designed to meet the demanding requirements of the next generation of rugged military and aerospace applications.

MODULE-R

FEATURES:

Permits direct, blind-mate, and reliable interconnections within avionics racks.

APPLICATION:

- Modular avionics

HE7-HE9/254

FEATURES:

The standardized single or double-sided connector range

APPLICATIONS:

- Industrial
- Navy
- Security & Defense

THERMAL CLAMPS

FEATURES:

Chassis devices, which both help to dissipate components heating and block the daughter cards into the box slots grooves.

APPLICATIONS:

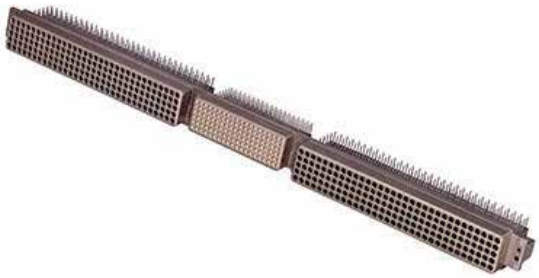
- Radar
- On Board Computer
- Actuator

LMF-Low Mating Force Rectangular M55302

Amphenol's Low Mating Force Connectors are well known in the connector arena – with proven performance on the ground, in the air, and at sea. – In service for over 25 years, with over 50 million brush contacts fielded; and qualified for use on M1A2 Abrams, F-16 Falcon, F/A-22 Raptor, F-35 Lightning II, AIM-132 ASRAAM and many more applications.

FEATURES & BENEFITS:

- 0.100 inch center to center, square grid contact spacing
- Application flexibility (parallel boards, perpendicular boards, wire to board, end to end boards, card extenders)
- 2, 3 and 4 row contact arrangements with 10 to 100 contacts per row in one contact per row increments
- Military versions meet MIL-DTL-55302/166 through / 172
- Termination versatility; straight & 90° PCB stud, wire wrap & crimp
- Options on termination lengths and plating
- Front release/front removable contacts in Mother Board, Daughter Board and PC version; rear release/ rear removable crimp contacts (size 22D) or printed circuit board pins provided with Input/Output connectors
- Accessories available for latching and polarization
- Up to 256 keyed, mating polarizations available
- Hybrids available – mix signal with power, RF or fiber optics
- Smaller sized connector designs with as few as 5 contacts per row
- RoHS compliant versions are available; consult an Amphenol Representative for more information.



Ruggedized VME64x, VITA 60, VITA 66 Interconnects

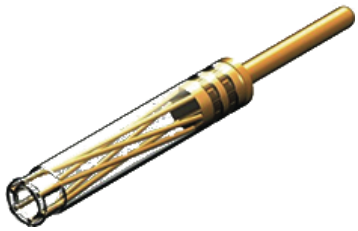
Amphenol Aerospace developed the Ruggedized VME64x in response to the military trend towards VME64x and the utilization of COTS Boards and Chassis. The Amphenol Ruggedized VME64x interconnect has a more rugged interface than standard connectors for improved vibration durability. It meets the needs for a harsh environment connector requiring Level 2 maintenance. Military and commercial aviation, military vehicles and GPS systems are examples of markets that need the ruggedized VME64x connector solution from Amphenol. The Amphenol Ruggedized VME64x connector mounts to standard VME64x cards and backplanes, but it does not mate to other types of VME commercial connectors.

The new VITA based **VIPER** connector:

- VITA46 / 48/60 standards-compatible high-density PCB connector
- 10 + Gb / s high-speed signal response
- 1.8mm × 1.35mm grid that was optimized for differential signal
- High reliability due to four locations contact of beam-like terminal
- Extremely strong resistance to vibration, impact
- Robust frame made of aluminum alloy
- The ESD protection structure by ring with guide pin ▪
- Fitting prevention structure and error due to key rotation

R-SATA

The new (Rugged) R-SATA style connector is perfectly suited as the primary internal storage interconnect for desktop and mobile PCs, connecting the system to peripherals such as hard drives, solid state drives, optical drives, and removable magnetic media drives. The R-SATA supports SATA 3.0 protocol, delivering 6.25 Gb/s data rates & beyond. Amphenol's R-SATA connector utilizes a Micro-Hyperboloid contact with proven performance. The Micro-Hyperboloid contact system offers low insertion and extraction forces, high durability counts and is resistant to shock, vibration and fretting corrosion.



4 body styles for 7 pin & Combo 22 pin arrangements

- Right Angle Plug (Daughterboard)
- Straight Receptacle (Motherboard)
- Right Angle Receptacle (PC)
- Straight Plug - Parallel Boards

FEATURES & BENEFITS:

- Ruggedized SATA style
- Supports SATA 3.0 protocol (6.25 Gb/s) & beyond
- Rugged Micro-Hyperboloid contacts
- Low insertion/extraction force
- 20K mating cycles
- Resistant to shock, vibration & fretting corrosion
- 7 pin SATA & Combo 22 pin R-SATA contact arrangements (two differential pairs, 3 ground)
- Foot print compatible with 3M SATA Connectors

LRM (Line Replaceable Module)

Amphenol LRM Surface Mount Connectors meet the high density needs of today's integrated electronic modules. Amphenol goes beyond the usual board level product offering. That's what you expect from a worldwide interconnect product leader.

MODULAR AVIONICS ARCHITECTURAL POSSIBILITIES:

With its flexibility in design, Amphenol LRM interconnects are capable of meeting the wide variety of user requirements for a board mount connector.

- Thousands of combinations of inserts are possible - tailored to meet user needs
- LRM interconnects can be designed in 1, 2, 3 (and more) bay configurations with many shell designs available
- LRM digital (brush contact) inserts can be combined with inserts for power, fiber optics, RF, high speed and high amperage RADSOK® contacts

HDB3 High Density/ HSB3 High Speed

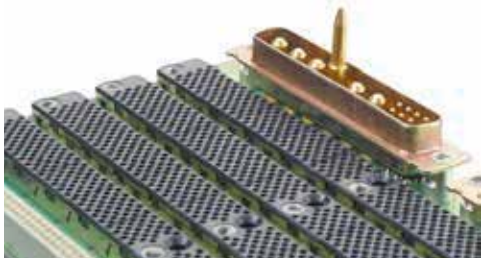
This new connector series incorporates a higher density contact pattern and lower mated height than Amphenol's standard low mating force rectangular connectors. HDB3 connectors utilize the same durable and reliable B3 brush contact in a tighter .070" X .060" staggered grid pattern.

FEATURES:

- 100,000 mating cycles
- Operating Temperature of -65°C to 125°C
- 36 unique keying combinations
- HSB3 data rates up to 6.25 Gbps

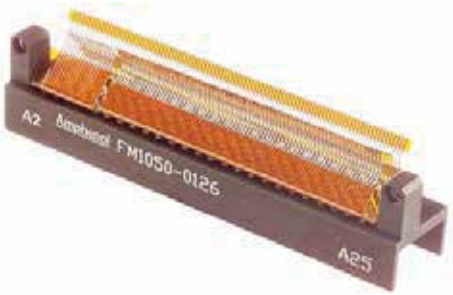
Power to Board

Amphenol **RADSOK®** solution offers options for high current single-point connections with a compact footprint design that can supply up to 120 Amps to the board. The hyperbolic grid contact provides more surface area with many points of contact for heat dissipation at the pin and socket interface. This lowers temperature rise and reduces potential failures. **RADSOK®** Power-to-Board products are designed to be applied manually by press-fit or by a re-flow solder process eliminating the need for additional wires and/or special crimp tools.



UHD Connectors with Fork & Blade Contacts

- 0.100" x 0.050" staggered grid - High density optimizes trace routing through the backplane
- Compliant press-fit termination of backplane connectors - Provides a gas-tight interface with the printed circuit backplane without the need for soldering
- Tuning fork and blade contact system - A proven technology for high reliability
- Low insertion force (2.25oz/contact) - For easy mating Daughtercard connectors feature surface mount termination via rigid pins or flex circuit - Maximum design flexibility depending on the application requirements
- Rugged machined aluminum frames - Ensures excellent performance in harsh environments



NAFI Connectors with Fork & Blade Contacts

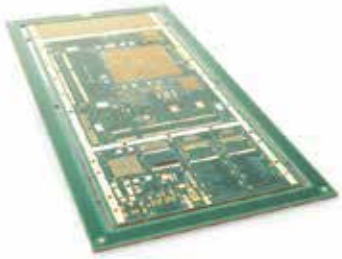
- Available in 2 through 4 rows - Offers maximum design flexibility
- Tested and qualified to MIL-C-28859 and MIL-C-28754 - Confirms the product meets specific performance requirements
- Tuning fork and blade contact system - A proven technology for high reliability
- Low insertion force (2.25oz/contact) - For easy mating
- Rugged machined aluminum frames - Ensures excellent performance in harsh environments
- Compliant pin press-fit, through-hole and flex circuit termination styles available - Support a variety of design application requirements

Printed Circuit Board Technology

The Leading Choice in Printed Circuit Board Technology

PCB / Flex

- Standard PCBs
- PCB Backplane
- Flex & Flex-Rigid
- Type 1 Single-Sided Flex
- Type 2 Double-Sided Flex
- Type 3 Multi-Layer Flex
- Type 4 Rigid Flex
- Type 4 Rigid Flex Book Binder



STANDARD PCBs

Categorized by single stage bond, conventional drilling and plating technology.

- Multilayer up to 40+ layers
- Wide range of laminate options including high reliability / temperature, low loss and lead-free laminates
- Mixed dielectric (hybrid) constructions
- RF and microwave circuits
- Heavy copper and thermal management solutions
- Embedded components

PCB BACKPLANE

A Printed Circuit Board consisting of multiple layers that is used as a conduit to transfer data, information and power to components within an electronics chassis/sever that supports “box-build” applications.

- Ease of assembly as circuit 1 and 1,000 are built with the same tooling guaranteeing reproducibility
- Larger sized backplanes eliminates “jumper” cabling within a chassis improving reliability, lowers assembly cost and creates stronger signal integrity
- High performance materials for high speed digital applications
- Wide range of material selections to suit the design from power to high-speed (56gb) applications
- Copper weight variability to carry high speed signal or power within one design
- Precision back-drilling for high-speed signal integrity

FLEX & FLEX-RIGID

Flex-rigid circuit technology provides a method to integrate multiple PCB assemblies, eliminate wires, cables or connectors, replacing them with flexible substrate between rigid sections. Flexible circuits allow the board to conform to a desired shape (flex) during its application. Our products can be found in a range of ultra-high reliability markets including aerospace, space and defense. We have developed extensive manufacturing experience, product knowledge and technical expertise through close collaboration with many leading OEMs.

TYPE 1 SINGLE-SIDED FLEX

Single-Sided flex, or Type 1 Flex, is a flex circuit based on one conductive layer of copper

- These types of circuits are very cost effective in replacing low-high volume simple wire harnesses
- Ease of assembly as circuit 1 and 1,000 are built with the same tooling guaranteeing reproducibility
- Military and IPC Specification qualified
- Silver shielding can be added for EMI protection
- Stiffeners can be added to “ruggedize” connection areas
- Full Turnkey Assembly solutions are available including all methods of Soldering, Potting, Conformal Coating, and Electrical Test

TYPE 2 DOUBLE-SIDED FLEX

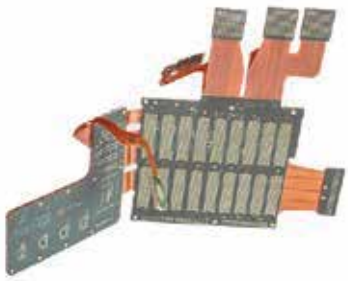
Double-Sided, or Type 2 Flex, is a flex circuit based on two conductive layers of copper that are interconnected through Plated-Through-Holes (PTH’s) or Vias creating electrically active circuitry on both conductive layers

- Cost effective and lightweight
- Ease of assembly as circuit 1 and 1,000 are built with the same tooling guaranteeing reproducibility
- Military and IPC Specification qualified
- Silver shielding can be added for EMI protection
- Stiffeners can be added to “ruggedize” connection areas “Button Plating” or Pads only plating is a method when copper plating a circuit that must maximize its flexibility in its end application
- The ability to plate to a ground plane with one conductor layer is a good cost effective way for stripline impedance
- Full Turnkey Assembly solutions are available including all methods of Soldering, Potting, Conformal Coating, and Electrical Test

TYPE 3 MULTI-LAYER FLEX

A circuits consisting of more than two copper conductor layers (typically less than 10) that are interconnected through Plated-Through-Holes (PTH's) or Via's creating electrically active circuitry on all conductor layers.

- Cost effective and lightweight
- Ease of assembly as circuit 1 and 1,000 are built with the same tooling guaranteeing reproducibility
- Military and IPC Specification qualified
- Through holes are "supported" as they are plated through creating a more reliable solder-joint
- A four layer circuit (two active layers and two ground planes) are a very common construction for 100-ohm differential impedance pairings
- Full Turnkey Assembly solutions are available including all methods of Soldering, Potting, Conformal Coating, and Electrical Test



TYPE 4 RIGID FLEX

A circuit consisting of more than two copper conductor layers that are interconnected through Plated-Through-Holes (PTH's) or Via's creating electrically active circuitry on all conductor layers. The flexible layers are integral to the "rigidized" layers and both the PTHs or Vias are plated through the rigid and flex areas.

TYPE 4 RIGID FLEX BOOK BINDER

A circuits consisting of more than two copper conductor layers that are interconnected through Plated-Through-Holes (PTH's) or Via's creating electrically active circuitry on all conductor layers. The flexible layers are integral to the "rigidized" layers and both the PTH's or Vias are plated through the rigid and flex areas; the flex-layers are built with a controlled progression to enhance flexibility.

- Cost effective and lightweight
- Ease of assembly as circuit 1 and 1,000 are built with the same tooling guaranteeing reproducibility
- By incorporating PCB and Flex into one design there are less points of failure as well as creating a smaller interconnect area
- Military and IPC Specification qualified
- Short Bend Radius
- High-layer count Rigid Flex that meets the needs of a tight bend radius
- Full Turnkey Assembly solutions are available including all methods of Soldering, Potting, Conformal Coating, and Electrical Test

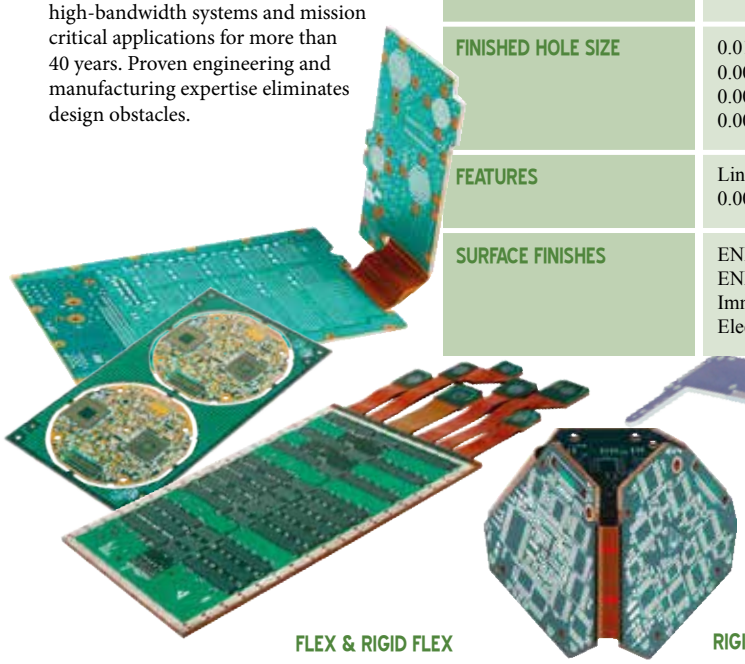
Amphenol

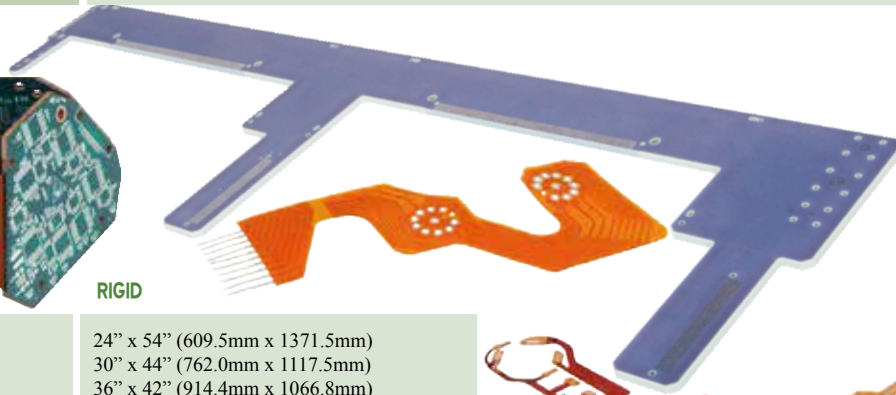
Printed Circuit Board Technology

Printed Circuit Board Capabilities

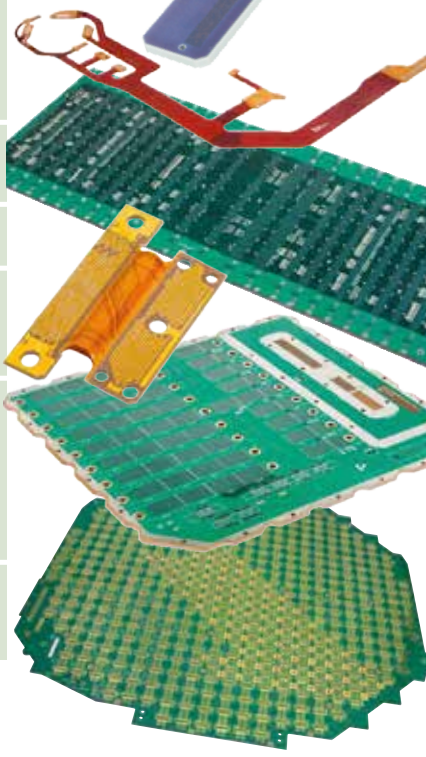
Amphenol Printed Circuit Board Technology is a world leader in the printed circuit industry, building Board Level Connectors, PCB's, Backplanes, Flex and Rigid Flex products and Advanced Assemblies to meet our customers' demanding needs. Amphenol capabilities are among the world's broadest and most advanced, delivering consistent quality and reliability for demanding high-bandwidth systems and mission critical applications for more than 40 years. Proven engineering and manufacturing expertise eliminates design obstacles.

DESIGN FORMATS	DXF PADS IGES	Mentor Graphics Cadence Allegro Design Services	Gerber Zuken	
MANUFACTURING FORMATS	ODB++ (preferred) DXF	Gerber 274x / 274d Autoplot	DPF IPC-D-356	Excellon HPIGL
INTERCONNECT FORMATION TYPES	Via Fill Conductive Via Fill Non Conductive Blind (laser & mechanical)	Back Drilled Dual Diameter Electrically Isolated	Thru Hole Buried SMT	
FINISHED HOLE SIZE	0.014" (0.373mm) 0.008" (0.203mm) 0.006" (0.152mm) 0.004" - 0.006" (0.101mm)	Compliant Pinned (rigid zone only) Via (A/R dependant) Buried Vias Microvias (up to 3 electrical layers)		
FEATURES	Lines / Spacing (Internal) 0.003" (0.0762mm) .5 oz. Copper	Lines / Spacing (External) 0.004" (0.1016mm) .5 oz.	Minimum Core Thickness 0.001" (0.0254mm)	
SURFACE FINISHES	ENIG ENEPIG Immersion Silver Electrolytic Ni/Au (Hard & Soft)	OSP HASL Immersion Tin Reflowed Tin/Lead		



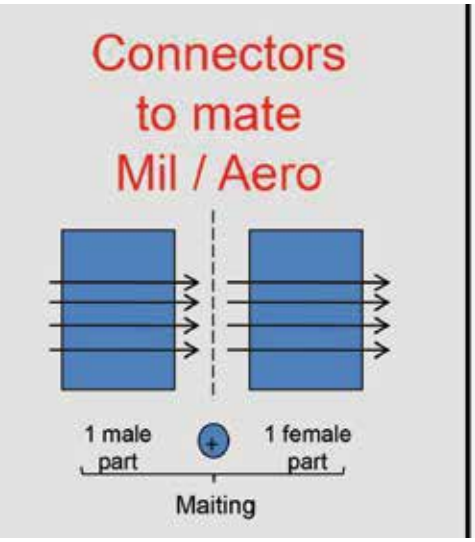


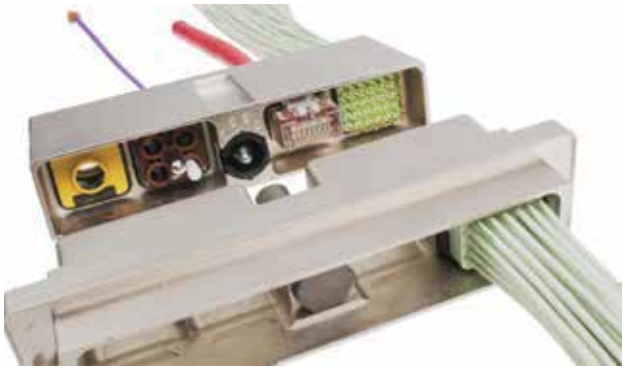
	FLEX & RIGID FLEX	RIGID
PANEL SIZE	18" x 24" 24" x 36" Other sizes available Current Largest is 38" x 54" (2 Layer)	24" x 54" (609.5mm x 1371.5mm) 30" x 44" (762.0mm x 1117.5mm) 36" x 42" (914.4mm x 1066.8mm)
MAXIMUM PANEL THICKNESS	.003" - .225" BookBinders Up to 0.500"	.500" (12.7mm)
LAYER COUNT	Up to 40 +	Up to 64 +
ASPECT RATIOS	Via Holes < 0.012 7:1 Via Holes >= 0.012 13:1 Blind Via Aspect Ratio 1.25:1	Compliant Holes >= 0.0225 17:1 Via Holes < 0.0225 13:1 Blind Via Aspect Ratio 1.25:1
MATERIALS Please contact Applications Engineering for the availability of additional materials - Hybrid Construction Available	Polyimide - LF/ FR/AP/GI/TK LCP Silver Epoxy Shielding Copper Epoxy Shielding Soldermask FR-4/ -24, 26 and 28	FR4 Low & High TG Rogers 3000/4000/6000 Polyimide Megtron 6 & Megtron 7 Nelco 4000-13 SI & EP LCP
IMPEDANCE SINGLE & DIFFERENTIAL	+/- 10%, +/- 7%	+/- 10% , +/- 7.5% , +/- 5.0%



Modular Connectors

- EN4165 SIM Modular Series 2
- MilAero SIM splice
- EN4165 / SIM Monomodule Connectors
- EN4165 / SIM connectors Series 3
- 3559 Push Pull connectors
- Specific SIM Modular Interconnection Unit
- 1900SIM modular connectors





EN4165 SIM Modular Series 2

Amphenol's EN4165 / SIM connectors are rectangular, modular and fully sealed (IP66, 68 and 69K). They are suited for specific (optical termini, RJ45, Quadrax…) or standard electrical crimp and PCB contacts (as per MIL-C-39029 or EN3155 spec. from gage 8 to 23). EN4165 spec. qualified, they come in metallic or composite versions, shielded or not (RoHS / REACH versions), and feature clicker nut or rack & panel plugs, and standard or flange-mount receptacles that can be assembled side by side on a panel providing unparalleled contact density. Available with Bright Nickel or Olive Drab Cadmium plating. 36 keying positions. Fire, Smoke and Toxicity conform to ABD0031 and FAR 25853.

MilAero SIM Splice

This modular composite splice provides a reliable and simple connection between two EN4165 / SIM modules. Available with or without cable clamp, and/or flange, the SIM splice can be fixed on/under a structure or Feed-through. It can be fitted with the whole range of EN4165 / SIM modules.

EN4165 / SIM Monomodule Connectors

These modular EN4165 push-pull connectors are in light weight composite, shielded, sealed and available in 7 keyed versions. Fitted with the whole range of SIM / EN4165 modules, they present a compact design with a push-pull locking system for blind mating. Suited for in-flight entertainment and cabin systems applications

EN4165 / SIM connectors Series 3

Amphenol's EN4165 / SIM connectors series 3 are scoop-proof rectangular, modular and fully sealed (IP66, 68 and 69K). They are suited for electrical crimp and PCB contacts (as per MIL-C-39029 or EN3155 spec. from gage 8 to 22). EN4165 spec. qualified, they come in metallic versions, both standard or shielded, and feature clicker nut or rack & panel plugs, and standard or flange-mount receptacles that can be assembled side by side on a panel providing unparalleled contact density. Available with Olive Drab Cadmium plating. 36 keying positions. Fire, Smoke and Toxicity conform to ABD0031 and FAR 25853.

3559 Push Pull connectors

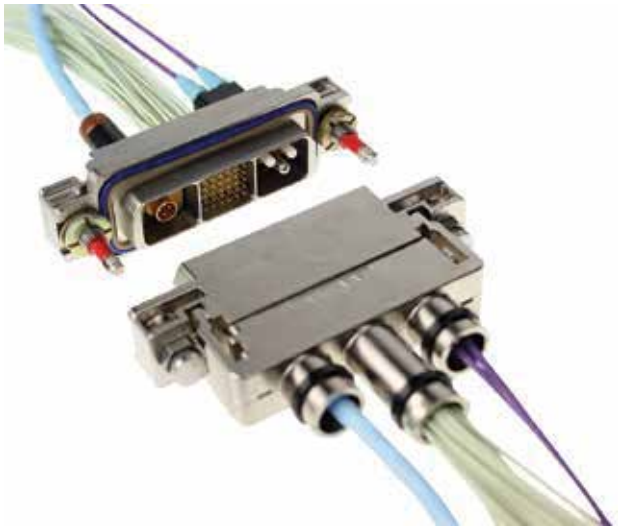
FEATURES:

- Mounted with SIM modules
- Multiple arrangements of contacts, size from 8 to 22 + ethernet
- Contacts gauge 8 to 26 AWG
- Contacts : MIL-C-39029, EN 3155, UTE C 93425 or ABS depending on contact types
- Connectors : AIRBUS ABS 1152, derived from EN 4165

Specific SIM Modular Interconnection Unit

FEATURES:

- Fully customized units:
- Form according to space requirements
- Module type, number and arrangements, as required
- Contacts type (according to MIL-C-39029)
- Connectors: derived from EN 4165



1900SIM Composite Connectors: NEW

The new 1900SIM connectors are modular (fitted with the whole range of EN4165 SIM modules), in light weight composite, shielded (including RoHS / REACH Bright Nickel and Black Zinc Nickel versions) or not, for sealed connections (IP66, 68 and 69K). They are designed to save time while installation: clip in backshells and various locking systems (standard, ¼ turn and Quick Lock Push Pull polarizers). They offer 36 keying positions and are conform to ABD0031 and FAR 25853 (Fire, Smoke and Toxicity).

1900SIM Connectors

Application: Aeronautic & Defence

screw ¼ turn Quick Lock

Except versions with Cadmium plating

SIM Custom Connectors

Application : Defence

Connectors to mate
Mil / Aero

Except versions with Cadmium plating

FEATURES:

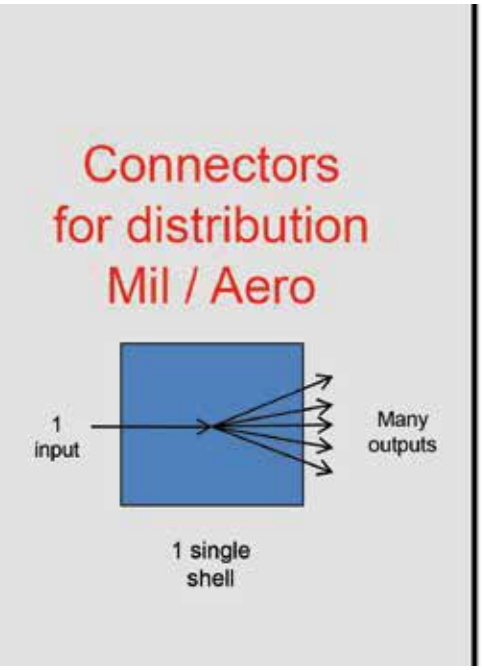
- Derived from EN4165
- Customized plates
- Metallic
- Shielding (Bright Nickel or Olive Drab Cadmium) for EMC
- Sealed - IP66 / IP68 / IP69K
- Possible coupling polarization
- Standard module range fitted with MIL-C-39029 / EN 3155 crimp contacts for electrical connection (size 23 / 22 / 20 / 16 / 12 / 8)
- Modules with PCB contacts (23 / 22 / 20 / 16 / 12)
- Also available: modules for RJ45, optical termini Lumiere®/Elio® or Amphelux®/Luxcis®, and special contacts (Quadrax, Twinax, Coax, Triax...)
- Operating Temperature : -55°C to +175°C (permanent)
- Conform to ABD 031 and FAR 25853

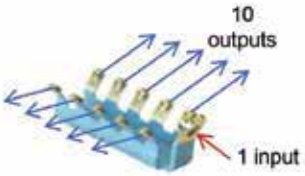
BENEFITS:

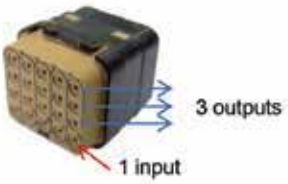
- Custom design
- Robust (metallic versions)
- Compact and High contact density : Space saving
- Sealed
- Modularity
- "Compartmenting" is possible inside the connector shell (signal, power, optical, RJ45, Quadrax…)
- Time saving : Use plates or custom connectors instead of many stackable connectors --> easy implementation

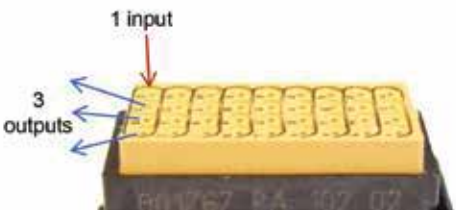
Distribution Solutions

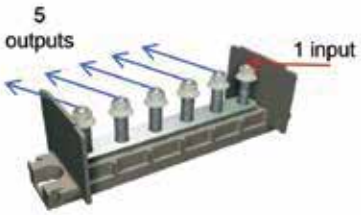
- Bus Bar – Power Distribution
- Monoblock Assemblies
- Quick Junction Modules
- In-Line Junction 1119 Series
- Relay Sockets
- MIL-T-81714 Series I
- MIL-T-81714 Series II
- M81714-style Electronic Splices and Modules
- 2759 Modules
- Ground Modules 1758 Series
- Sockets for Lights
- Sockets for Switch











Bus Bar – Power Distribution

Amphenol'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.

Monoblock Assemblies

Designed for power distribution purposes, the monoblock assemblies are made of terminal junction block, for copper or aluminum cable connections. Monoblock assemblies are available with individual or shunted terminals, from 1 to 12 terminals, in different diameters. The protective cover fixing, as well as the terminal assembly's fixing on structure are ensured by pillar bolts.

Quick Junction Modules

Quick junction modules for signal and low current distribution, where sealing (IP66 / IP68 and IP69K), space and weight-saving are prime requirements. Specifically suited for wiring optimization, then offering weight and cost savings, these track-mounted modules (on metallic or composite track) are available from 8 contacts size 12 up to 36 contacts size 22 in different contact configurations. They also come in hybrid or ground versions, as well as PCB or component carrier versions. Fully REACH / RoHS compliant and conform to ABD0031 and FAR 25853 (Fire, Smoke and Toxicity).

In-Line Junction 1119 Series

These in-line junctions are available in 1 to 4 contacts versions, for copper or aluminum cable contacts, and also exist in components carrier versions (diodes, resistors or fuses inserted). Fully sealed, compact, thin and easy to use, they are perfectly suited in a cable harness, to easily insert a component and change a signal, or simply to repair a damaged wire.

Relay Sockets

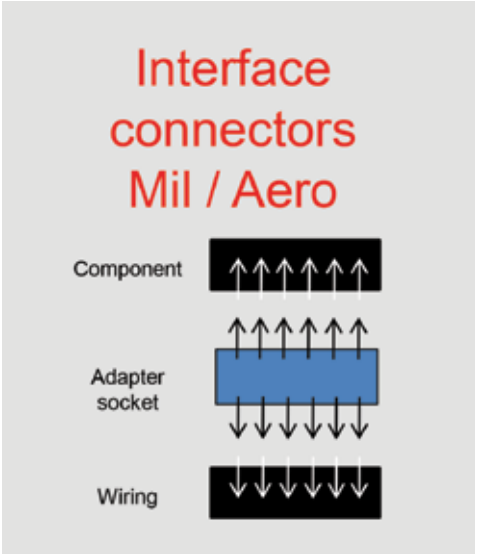
- NF C 93422 Relay Sockets
- MIL-S12883 Relay Sockets
- Solder Cup and PCB Relay Sockets
- Airbus-ATR Relay Sockets
- Railway Relay Sockets
- Quick connect Relay Sockets

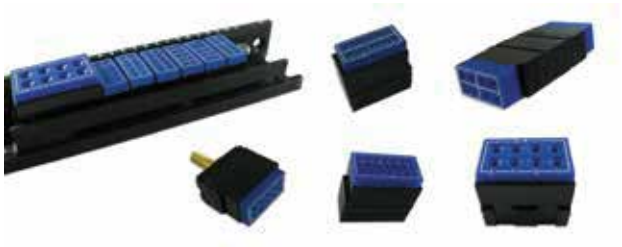
Features:

- Adaptation device between a Relay and a Cable harness
- Lightweight composite
- For 4, 14 or 16 cts size 20 / 16 (crimp contacts)
- Operating temperature : -55°C to +150°C (permanent)
- Conform to ABD 031 and FAR 25853

Benefits:

- Lightweight (composite + silicone)
- Sealed connection





MIL-T-81714 Series I

Designed and qualified to MIL-T-81714, Amphenol's Series 1 Terminal Junction Modules are robust, reliable, and always perform to the highest standards. They're offered in various types and configurations -- Feedback/ Feedthru, Electronic, In-Line Splice, and Ground -- and they use standard M39029/1 pin contacts. Mounting rail and installation/termination accessories are available, and customization is always an option for your particular requirement and/or application.

Features:

- M39029/1 contacts
- Integral Socket/Bus Bar -assures electrical and mechanical integrity over long product life
- Stainless Steel Contact Retainers -high conductivity allow for optimum electrical performance
- Split Socket Design -provides peripheral surface wipe and contact; Uses the maximum mating surfaces of pin and contact
- Five standard sizes, accommodating 12-26 AWG wires
- High Density Modules -conform to all dimensions and performance requirements of MIL-T-81714/17
- Feedback Modules -lightweight junction system with a full range of bussing arrangements
- Distribution Modules -provides variety of contact combinations for power distribution applications
- Ground Modules -available in both center stud and mounting flange versions
- Electronic Modules - embedded diodes, resistors, capacitors, and fuses; based on M81714/62 requirements
- Board Mount Pin Modules -Provided in solder pin version that mounts directly to printed circuit boards

MIL-T-81714 Series II

Designed and qualified to MIL-T-81714, Amphenol's Series 2 Socket Junction Modules are robust, reliable, and always perform to the highest standards. They're offered in various types and configurations -- Feedback/ Feedthru, Board Mount, Sealed Splice, and Ground -- and they use standard M39029/22 socket contacts. Mounting rail and installation/termination accessories are available, and customization is always an option for your particular requirement and/or application.

Features:

- MIL-T-81714 Approved -meets high quality standards M39029/22 contacts
- Multiple product types -wide range of products to choose from;
- Five standard sizes; Accommodates 12-26 AWG wires
- Feedback Modules -lightweight junction system with a full range of bussing arrangements
- Distribution Modules -provides variety of contact combinations for power distribution applications
- Ground Modules -available in both center stud and mounting flange versions
- Electronic Modules - embedded diodes, resistors, capacitors, and fuses; based on M81714/62 requirements
- Board Mount Pin Modules -Provided in solder pin version that mounts directly to printed circuit boards; Eliminates need for mounting track

M81714-style Electronic Splices and Modules

Single and Dual Electronic splices and Electronic Junction Modules are designed to provide a quick and efficient solution to application design wiring requirements. Single and Dual Wire Splices conform to M81714/21, /23 and /24. TJSE Electronic Modules conform to M81714/26. SJE Electronic Modules conform to M81714/62. All can be supplied with a wide variety of diodes, resistors, capacitors, and fuses. Amphenol's electronic solutions allow customers to incorporate system modifications into a wire bundle, avoiding changes in panels or boards.

Features:

- 22, 20 & 16 awg wire support
- M81714 Series 1 and Series 2 Styles available
- Available with a variety of components and in a wide range of configurations
- Diodes, resistors, fuses, capacitors, thyristors, and inductors
- Available with multiple components within one module
- New configurations produced regularly and customized components are also available

2759 Modules

Density distributor module in the 2759 Series that has up to 6 crimp contacts and adheres to the MBBN3495 standard. It's suitable for aircraft and military. Modules are ratcheted onto a rail. Twinax contacts for various cable types.

Features:
- Protection class IP67
- Temperature range from -55° to +175°C

Ground Modules 1758 Series

Quick junction modules for signal and low current distribution, where sealing (IP66 / IP68 and IP69K), space, and weight-saving are prime requirements. Specifically suited for wiring optimization, while offering weight and cost savings, these modules come with individual mounting brackets or can be mounted on metallic tracks. They are available from 36 contacts size 22 to 8 contacts size 12, including mixed configurations.

Features:
- Distribution modules for grounding applications
- Suited for wiring optimization (cable linear meters : weight, space and cost saving)
- Very compact design and high contact density
- 2 versions : Individual mounting brackets or mounted on metallic tracks
- Overmold Technology offering excellent sealing performances

Sockets for Lights

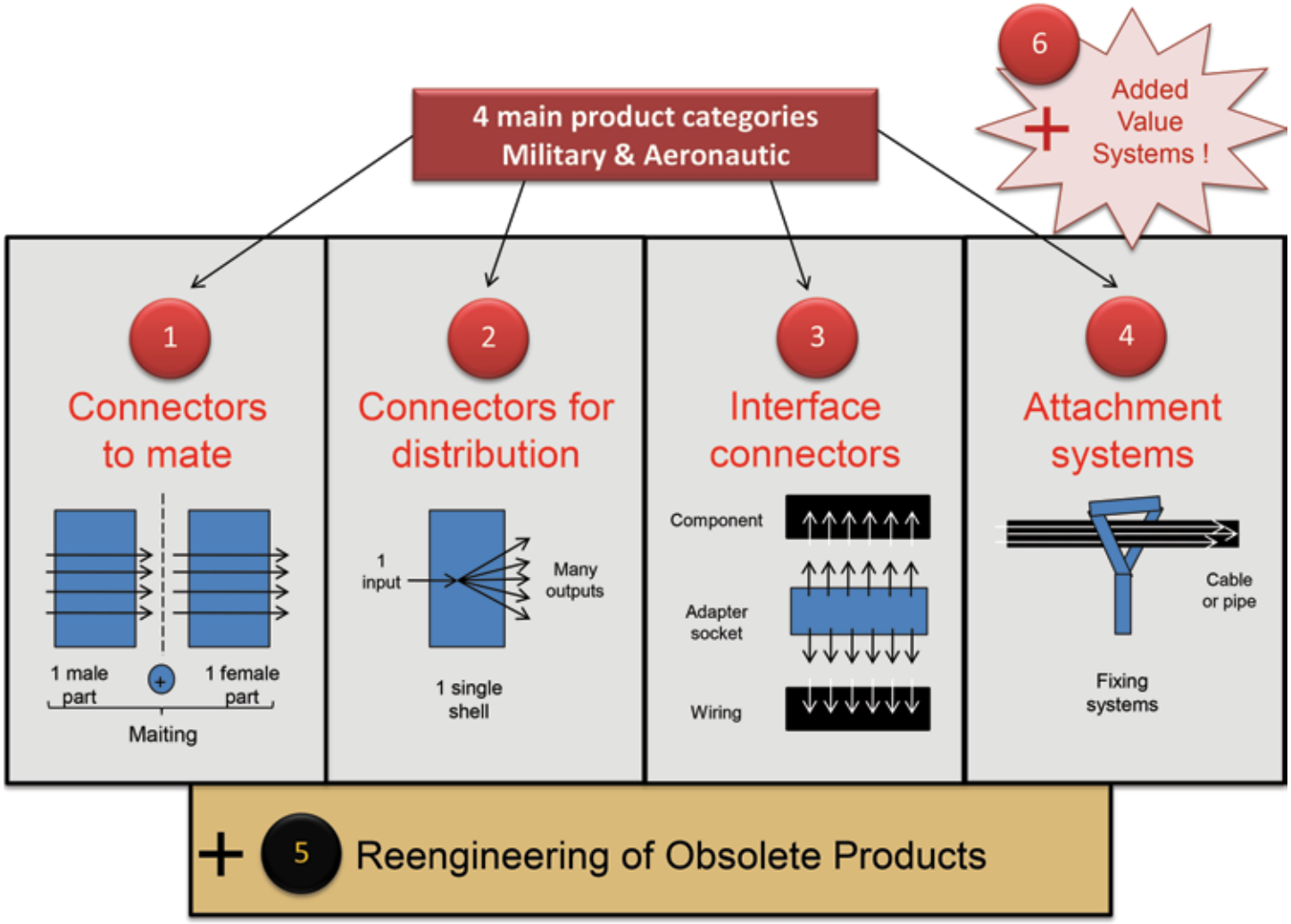
Features:
- Adaptation device between a Lighting or a Push button and a Cable harness
- Lightweight composite
- For 18 cts size 22 (crimp contacts)
- Operating temperature : -55°C to +175°C (permanent)
- Conform to ABD 031 and FAR 25853

Benefits:
- Lightweight (composite)
- Sealed

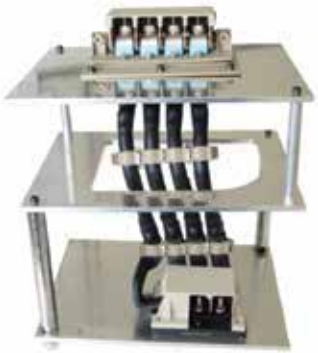
Sockets for Switch

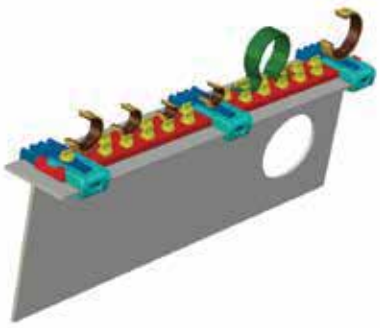
Features:
- Adaptation device between a Switch button and a Cable harness
- Lightweight composite
- For cts size 20 or 22 (crimp contacts or solder cup)
- Operating temperature : -55°C to +175°C (permanent)
- Conform to ABD 031 and FAR 25853

Benefits:
- Lightweight (composite)
- Sealed



Added Value Systems Mil / Aero





- ABS 1339 Monoblock Cable Clamps
- ABS 1339 Light Clamps
- CC516 Monoblock Cable Clamps
- Pipe Clamps
- Wiring Accessories

Attachment Systems Solutions

ABS 1339 Monoblock Cable Clamps

The monoblock ABS 1339 cable clamp allows the perfect fixing of electrical cable harnesses on structure. These cable clamps are fully designed in composite with silicon overmolding, providing a perfect bundle protection from shocks and vibrations. They are available in 8 sizes, for bundles from 3 to 48 mm, and are available for general (brown silicon) or fuel zone use (blue silicon). They are fixed on structure by a screw and are closed by a simple cable tie.

ABS 1339 Light Clamps

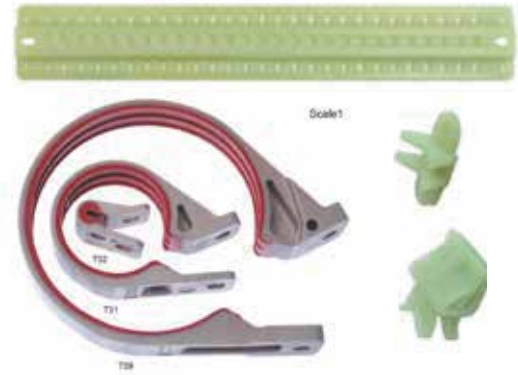
"The monoblock ABS 1339 Light cable clamp allows the perfect fixing of electrical cable harnesses on structure. Derived from the legacy ABS1339 standard, they offer up to 18% weight saving. These cable clamps are fully designed in composite with silicon overmolding, providing a perfect bundle protection from shocks and vibrations. They are available in 8 sizes, for bundles from 3 to 48 mm, and perfectly suited for general use. They are fixed on structure by a screw and are closed by a simple cable tie.

CC516 Monoblock Cable Clamps

The new monoblock CC5516 composite cable clamp are a lightweight version of standard metallic NSA5516 clamps, offering -60% weight saving. They are mounted on structure and locked in one step by screw. CC5516 clamps are available in 37 sizes, for bundles or pipes from 3 to 60 mm diameters. The overmoulded silicone provides a perfect protection of bundles and pipes from shocks and vibrations.

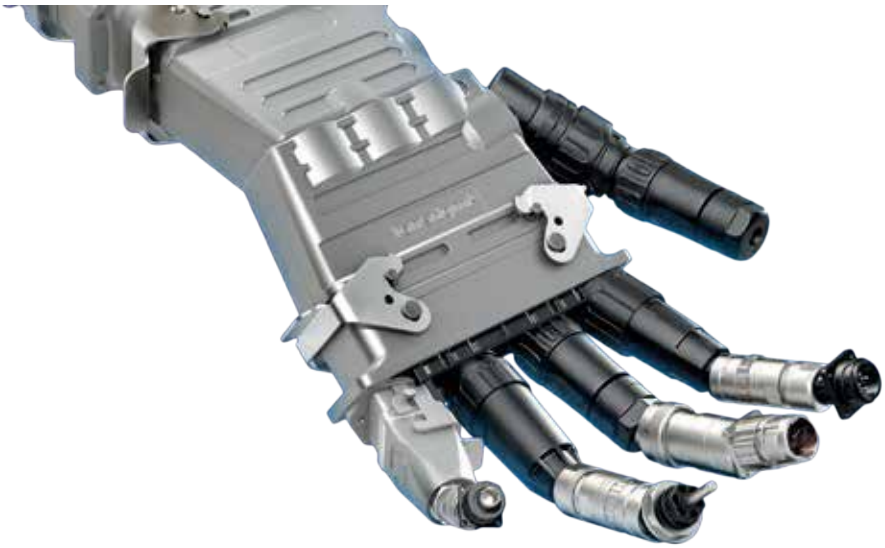
Pipe Clamps

Amphenol monoblock pipe clamps allows the perfect fixing of hydraulic pipes on structure. These pipe clamps are fully designed in composite with silicon overmolding, providing a perfect protection to the pipes from shocks and vibrations. Multiple versions are available, for general (brown silicon) or fuel zone use (blue silicon), with 1 to 5 holes from various and mixed diameters (from 6.3 to 19 mm). They are closed and fixed on structure by screws



Wiring Accessories

- Mil/Aero Wiring Accessories
- Railway/Industrial Wiring Accessories
- Mil/Aero Cable Clamps
- Railway/Industrial Cable Clamps
- P & Omega Clamps Mil / Aero accessories



Heavy Duty Connectors

The Heavy Equipment market segment is one of the most demanding markets in the industry that is subject to environmental impacts. It includes agricultural vehicles, construction equipment, commercial vehicles, etc.

Amphenol has a wide range of connectors specially made for this market, starting with small sealed signal connectors, and going up to complex high-voltage and high-current solutions. Amphenol is a leading specialist for this market and understands the demands, therefore even customer-specific solutions are no problem for Amphenol to design.

RT360 Series

Rugged metal circular connector with power and signal, multiple insert arrangements available.

M23 and M40

DIn-style IP67-rated connector system with control & power for automation environments.

A Series

Amphenol's A Series connectors encompass a wide range of products serving a variety of industries. With applications in Heavy Duty, Transportation, Marine, Diagnostic, Military, Alternative Energy and Agricultural industries, as well as spanning the gap between controlled to harsh environmental conditions, our A Series connectors keep you connected with confidence.

FEATURES:

- Sealed
- Submersible
- Vibration-resistant
- Cost Effective

HEAVY|MATE C146

HEAVY|MATE C146 is a Modular Metal Connector Line consisting of:

- Hoods & Housings
- Inserts
- Contacts

FEATURES:

- Hybrid interconnections
- Good costs
- Voltage up to 1000V
- VDE, UL, CSA approvals
- Vibration proof
- High current
- Signal transmission
- High pole sizes
- IP65 to IP68
- Corrosion resistance
- Robust

BENEFITS:

- Indoor & outdoor applications
- A wide range of inserts for signal and power transmission
- A large variety in pole sizes from 3 up to 280 poles per connector
- Current ratings up to 250A per contacts and voltages up to 1000V
- A modular connector system to configure customized solutions

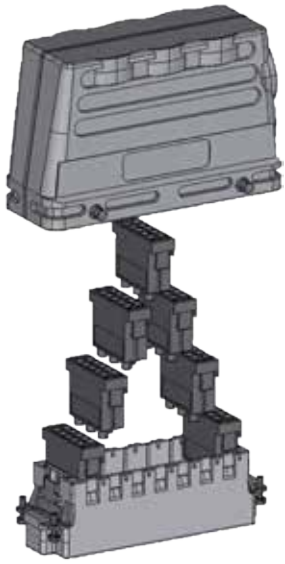
APPLICATION:

- Connections in harsh environment
- High number of poles or different kinds of signals transmitted
- Power and signal transmission outdoor
- Very safe & quick locking required
- Good EMC protection required

HEAVY|MATE C146 MODULAR

In addition to HEAVY|MATE standard single insert system, Amphenol offers a new modular system that consists of:

- Hoods & Housings
- Frames
- Individually specialized modules
- Contacts



ADDITIONAL FEATURES:

- Fully intermateable with market standards
- Stamped contacts and the Radsok contact technology
- Wide range of Power- and Signal modules
- Large selection of contact-safe male contacts
- Easy Handling
- Robust metal or plastic frame options
- Modules are easy to assemble and disassemble

ADDITIONAL BENEFITS:

- Great cost savings potential
- Pin modules separately protected against mechanical influences
- High flexibility for future developments

Amphenol is the innovator and solution provider for all products that are to be used in the harsh and rugged environments (indoor or outdoor).
Amphenol has a big spectrum of rugged and harsh environment interconnects ranging from IP65 to IP69K.

Plastic Connectors

LUMINUS

The Luminus Series are small, cost-effective connectors that are highly reliable and simple to use. With multiple product options to choose from, they meet MIL-T-81714, accept AS39029 & Stamped & Formed contacts, and are environmentally-sealed. Ideal for where space is limited, these innovative connectors feature a locking mechanism that ensures stability, and are suitable for blind-mating.

FEATURES:

- Quick Connect & Blind-Mate
- Multiple keying options
- Environmentally sealed
- Durable
- S&F contacts for non-military applications

Pulse-Lok

Pulse-Lok® connectors have a unique locking coupling system with both tactile and audible confirmation for secure connections as well as quick-release action. These connectors are excellent for medical, factory automation, and instrumentation field applications. Many contact types are available, including signal, power, high-voltage, and Ethernet.

FEATURES:

- Quick release action
- Small package (.500 — 1.2” diameter)
- Tactile confirmation
- 1 to 78 contacts

ECO|MATE

This connector meets the high requirements for applications in industrial technology. Easy operation, reduced dimensions and a more robust design are only a few of the features of the series.

The connector's main area of application is in the fields of plant construction and machine building. The connector is used for measuring and controlling applications as well as for power supply.technology. The series is comprised of a large selection of housings and shapes and offers models with screw, solder and crimp termination.

FEATURES:

- Circular Connectors with 3+PE and 6+PE contacts
- Housing components from premium molding material
- Cable housing straight or angled
- IP 65/67 in mated condition (DIN EN 60526)
- Clamping ring or internal strain relief

ADVANTAGES:

- Quick and easy assembly
- Screwed cable gland with clamping ring
- Strain relief and mounted gasket all in one component
- Cable housing, straight or angled, for the cable diameter 6 - 12,5 mm
- Robust thread for the screwed cable gland
- Ergonomically designed product range for safe handling
- Pre-loaded ground contact
- Fastening for the protective caps on the housing of the receptacles

Plastic Waterproof Connector Series

FEATURES:

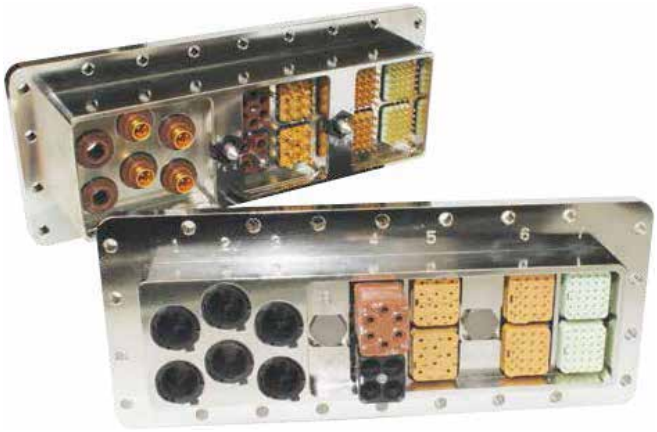
- Mating Options: Screw Threaded Type, Lock Bayonet Type or Push Lock Type
- Contact options: Stamped, Screw-In, PCB and Solder (up to 30A per contact)
- Receptacle, Receptacle with cable, Over-molded With Cable & Field Installable available
- Insert Arrangement: Variety of configurations are available including:
  - Circular
  - Power
  - Hybrid
  - DVI
  - RJ
  - USB
  - D-Sub
  - HDMI
  - e-SATA
  - Fiber Optic
  - M type Sensor
  - IEEE 1394
- M8/M12 Series meets industry standards (IEC, NMEA2000, DeviceNet, EtherNet, I/P, Profibus & ProfiNet)
- Various sizes, over 1000 items
- UV Resistant
- IP65/66/67/68/69K waterproof (mated or unmated)
- PVC, PUR Jackets available for cables (Sun, Oil Resistant & Flame rated)
- UL/CSA Approval

ADVANTAGES:

- Cost Effective Solution
- High level of customization possibility
- Easy mating

Consider Amphenol as an extension of your design team, providing expert design and applications engineering assistance every step of the way to ensure program success. This is a perspective that other individual connector, board, and backplane assembly suppliers cannot match.

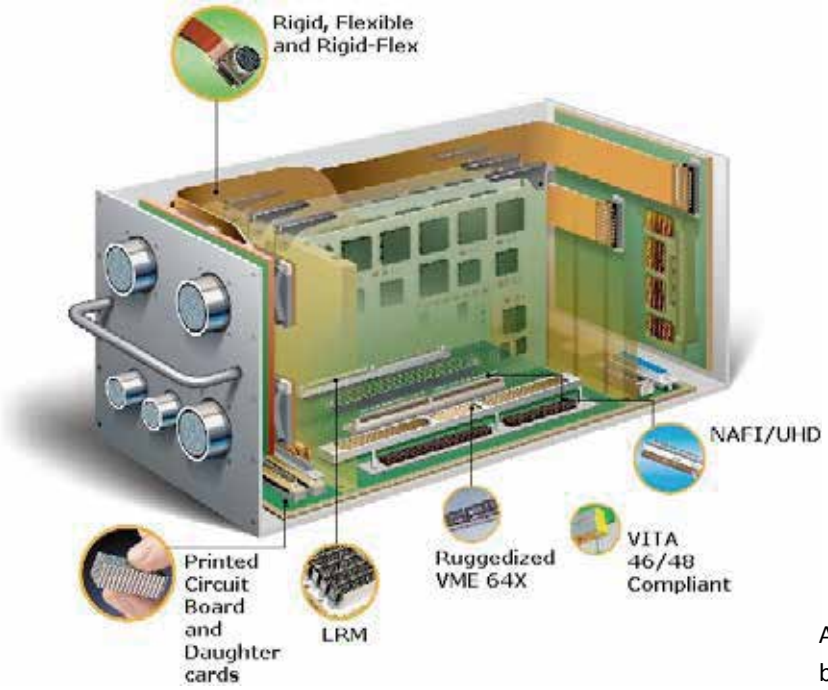
Custom Solutions



8 SIM modules
6 quadrax contacts

Metallic custom design rackable modules

Cable Harness Test Kit Box with MIL-Spec Circulars



Integrated Systems

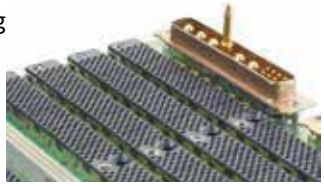
From Avionics to Ground and Naval Systems, Amphenol's Integrated Systems solutions are found aboard commercial airliners, helicopters, Navy and Air Force Fighters, C41 electronics, missiles, ground vehicles, Homeland Security Systems, and Navy warships around the world.

Amphenol Integrated Systems tackles problems such as PWB routing, signal integrity, mechanical robustness, and thermal reliability concurrently rather than independently by value-added applications engineering support. Solving complex packaging challenges depends on making sure that environmental, mechanical, and electrical factors are all addressed at the system-level. By taking this system-level perspective and focusing on these factors, Amphenol Integrated Systems is able to meet your program's most challenging packaging requirements.

Backplane Systems

Amphenol is the leading manufacture of custom backplane assemblies using high - density, ruggedized, board to backplane interconnects. Our Backplane production capabilities include:

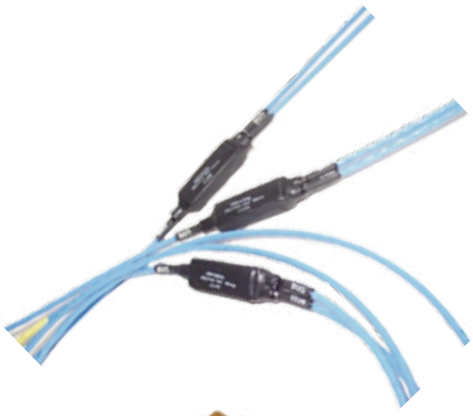
- Press-Fit
- Rigid and Rigid Flex PWB's
- Surface Mount Soldering
- Through-Hole Soldering
- Hybrid Optical Electric
- Conformal Coat
- Electrical test



Amphenol Backplanes are required to perform in the most demanding environments such as commercial airliners, Army helicopters, Navy and Air Force fighters, C4I electronics, missiles, ground vehicles, and Navy warships. Our Backplanes are used on programs such as the F-35 Joint Strike Fighter, F-22 Raptor, F-18 Super Hornet, Theater High Altitude Air Defense Radar, AH-64 Apache, RAH-66 Comanche, and AEGIS radars used on U.S. Navy warships.

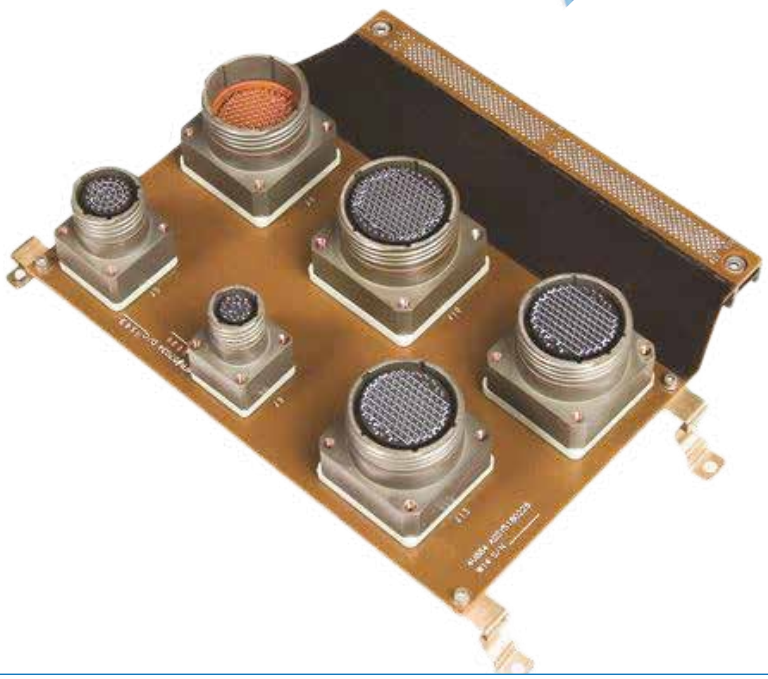
Amphenol provides printed circuit processing capabilities that are among the world's most advanced, specializing in high technology multilayer backplane applications.

Cable Assemblies



Amphenol is the world leader in the design, manufacture and supply of high-performance interconnect systems for military, commercial and industrial applications. Amphenol offers an extensive global portfolio of interconnect solutions for demanding and harsh environments which includes value added services.

Amphenol Ltd has an extensive design and manufacturing facility with the capability to offer customers added value services from cable systems to complete box build.



Type 2 Double-Sided Flex

CHARACTERISTICS:

- Double-Sided, or Type 2 Flex, is a flex circuit based on two conductive layers of copper that are interconnected through Plated-Through-Holes (PTH's) or Via's creating electrically active circuitry on both conductive layers

FEATURES:

- Worlds most popular flex circuit design
- Ease of manufacturing or assembly
- Through holes are

OPTIONS:

- Silver shielding can be added for EMI protection
- Stiffeners can be added to "ruggedize" connection areas
- "Button Plating" or Pads only plating is a method when copper plating a circuit that must maximize it's flexibility in it's end application
- The ability to plate to a ground plane with one conductor layer is a good cost effective way for stripline impedance

BENEFITS:

- Cost effective and light weight
- Ease of assembly as circuit 1 and 1,000 are built with the same tooling guaranteeing reproducibility
- Military and IPC Specification qualified

OTHER Flex Options from Amphenol:

- Type 1 Single-Sided Flex
- Type 3 Multi-Layer Flex
- Type 4 Rigid Flex
- Type 4 Rigid Flex Book-Binder

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