Amphenol

DEFENCE & AEROSPACE

WE ARE

YOUR SPECIAL FORCE

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CORE

DESCRIPTION

Amphenol is the D38999 connector industry leader and has the broadest, most expansive D38999 connector portfolio in the world. From legacy Series II connectors to the latest in high-speed solutions, Amphenol offers a wide variety of options for virtually any system.

PRODUCT SERIES

Dualok Interconnect System: An enhanced anti-decoupling mechanism applied to D38999 plugs that improves electrical performance in harsh environments.

HD38999 High Density: 30% more contact density than the highest density Mil-Spec D38999 connectors of its size.

MIL-DTL-38999 TV, Series III: Amphenol's D38999 Series III connectors offer the highest performance capabilities for both general duty and severe environment applications.

MIL-DTL-38999 Series I & II: Developed to meet the needs of the aerospace industry and proved the impetus for the development of MIL-DTL-38999

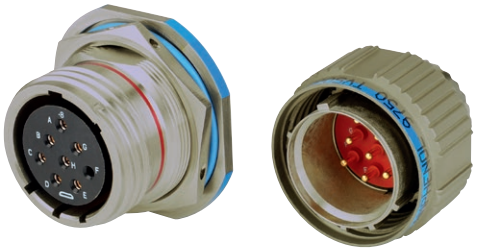
SJT: Combine unique design features of the scoop-proof LJT series within standard mounting dimensions of JT types.

Aquacon Series: Designed to provide maximum service in oceanic or fluid immersion applications.

Accessories: A full range of accessories that are designed to enhance the performance of Amphenol D38999 connectors.

ADDITIONAL CONNECTORS

TV-CTV: in composite



D38999 CONNECTOR SERIES

SIZE 7 38999

DESCRIPTION

- Save space and weight on military equipment without decreasing the performance of the system.
- Connector Size 8 grounded cavity, Black Zinc Nickel plating, for quadrax standard 38999 III

FEATURES AND BENEFITS

- Match the performances of connector type 38999 III in terms of:
  - Shocks and vibrations
  - EMI shielding
  - Temperature 200° depending on the plating
  - Electrical performances
- Different from 38999 :
  - Anti-decoupling devices (2 starts intead of 3 in 38999)
  - Integrated backshells only

DESCRIPTION

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.

MIL-DTL-38999 CONNECTORS, METAL & COMPOSITE

- 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
- **Series I (LJT)** – Bayonet coupling
  - Scoop-proof (recessed pins) offers maximum contact protection
- **Series II (JT)** – Bayonet coupling
  - For applications requiring maximum weight/space savings and reliability
- **Series III (Tri-Start)** – Threaded, quick coupling in one complete turn
  - Designed for general duty as well as severe environmental applications
  - Superior EMI shielding with grounding fingers and metal-to-metal mating
  - Filter/Transient protection versions available
  - Scoop-proof contact protection
  - Stainless steel firewall versions, and composite versions
  - Available in Hermetics

PRESS-FIT CONNECTORS FOR PCB APPLICATIONS

Amphenol manufactures a complete series of MIL-DTL-38999 Series I, II, and III Connectors with Press Fit compliant pin contacts for solderless mounting on printed circuit boards. Both pin and socket contacts are available in any MIL-DTL-38999 Series I, II or III insert pattern having contact size 16, 20 or 22D

- High speed, low cost board assembly
- Elimination of soldering thermal stress
- No cold soldered joints
- No short circuits by soldered connections
- No cleaning of excess flux
- Optional contact for piercing conformal board coating is available

CIRCULAR CONNECTORS WITH PCB CONTACTS

HD38999 HIGH DENSITY

DESCRIPTION

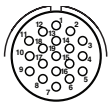
Goes from 9 to 187 contacts!

The HD38999 family of connectors has 30% more contact density than the highest density Mil spec D38999 connectors of its size. This series of connectors was designed to utilize mil-specified 38999 components with the exception of the contacts and inserts arrangement. Utilizing existing mil-qualified AS39029 size 23 contacts and D38999 insert materials, these connectors are essentially a drop-in replacement for the standard D38999 connectors.

This connector design benefits users in a couple of different ways. For those users who need in increase the amount of contacts in their application, the HD38999 series allows them to do so without increasing the size of their connector.

For users who are looking to decrease the overall size of their system, they can do so by using smaller shell sizes without decreasing the number of contacts. Amphenol has qualified this series of connectors to the requirements of MIL-DTL-38999. Amphenol also manufacturers this high density series in Filter, Hermetic and customized versions to fit our customers' needs. Please contact us if additional information is required.

9-9



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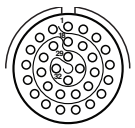

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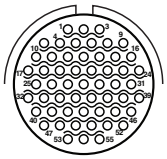

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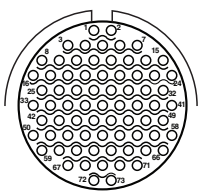

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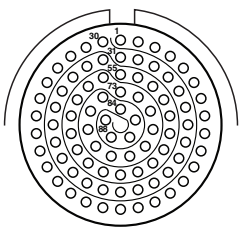

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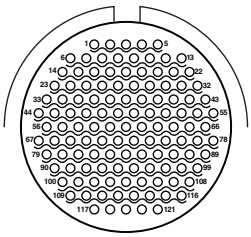

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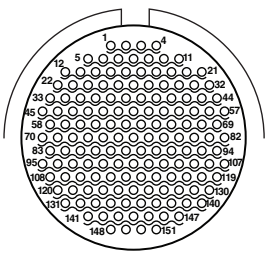

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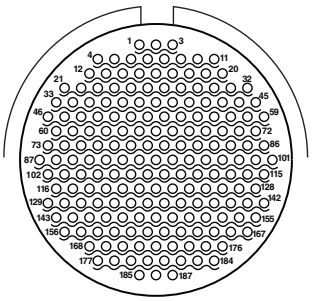


25-187

DESCRIPTION

Amphenol Tri-Start Breakaway Fail Safe Connectors provide unequaled performance in environments requiring instant disengagement. They are designed to provide quick disconnect of a D38999 Series III 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

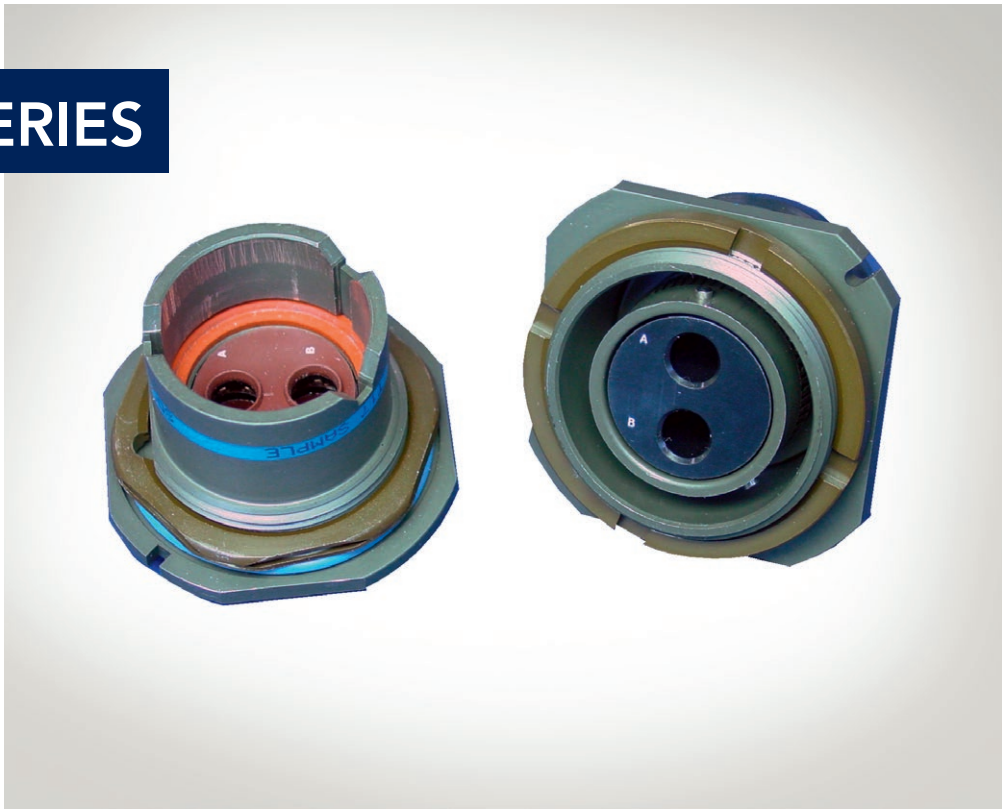
Amphenol Breakaway Fail Safe connectors are qualified to MIL-DTL-38999/29, /30 and /31 (for MIL-STD-1760 Stores Management applications). Amphenol offers more qualified Breakaway shell size and insert combinations than any other QPL supplier. In addition to standard Breakaway connectors, Amphenol also manufactures custom breakaway connectors including those with:

- Highly durable non-metallic operating sleeves in a variety of lengths and diameters
- Increased pull-force capability
- Low-profile designs
- Custom lanyard lengths and backshells
- Low force separation capabilities
- Low insertion/separation force contacts
- Non-cadmium finishes

Other Amphenol circular families (MIL-DTL-26482, MIL-DTL-83723) also offer breakaway quick-disconnect connectors.

BREAKAWAY FAIL-SAFE LANYARD RELEASE PLUG CONNECTORS

RNJ SERIES



DESCRIPTION

The RNJ series rack and panel connectors used to connect electrical and optical devices between a moving unit (rack) and a fixed unit (panel) without any coupling / uncoupling device. These connectors are derived from the LJT series and meet or exceed the MIL-DTL-38999 Series I requirements.

FEATURES AND BENEFITS

- EMI shielding
- Shells are grounded before contact mating
- Lightweight space saving design
- Durability: 500 cycles
- Moisture resistance: in addition to interfacial seal, main joint gasket and rear gasket on the plug are set up for moisture sealing between connector halves
- Corrosion resistance:
  - olive drab cadmium or electroless nickel
  - Free cadmium version also available.
- 8 shell sizes from 11 to 25
- Contact protection: 100% scoop-proof.
- Temperature range: -65°C +175°C
- Insulation resistance > 5000 Mohms at ambient temperature

DESCRIPTION

Amphenol combines the benefits of field proven MIL-DTL-38999 Series III circular connectors with low resistance hyperbolic RADSOK® power contacts. Designed to meet the latest military and industrial specifications, Rhino 38999 connectors also comply with stringent safety requirements. Rhino 38999 connectors are intended to satisfy market requirements for high power & voltage applications in harsh environment conditions. With IP68 sealing, an anti-decoupling ratchet mechanism, superior EMC performance and RoHS compliant Black Zinc Nickel plating, Rhino 38999 connectors ensure a reliable connection even under high vibration.

FEATURES AND BENEFITS

- Hyperbolic contact design
  - High reliability; low engagement separation forces
  - Low contact resistance; high contact endurance
  - High current carrying capacity up to 1000A
- Touch-Protected Contacts
  - High degree of safety
  - IP2X finger protection
- Safe Mating Design
  - Keyway engagement prior to contact connection ensures system protection
- MIL-DTL-38999 series III design features
  - Proven performance in the field
  - Tri-start thread coupling mechanism
  - Suitable for high vibration environments
  - Anti-decoupling ratchet mechanism
  - Superior EMC performance
- MIL-DTL-38999 panel cut-outs: Industry standard footprint
- MIL-DTL-38999 black zinc nickel plating RoHS Compliant
  - Meets the industry requirements to restrict the use of hazardous substances 500hrs salt spray endurance
  - GVA compliant
- Sealed to IP68 (mated): A high degree of sealing to protect against dust and water ingress
- Multiple key orientations: Six standard key options to prevent mis-mating

RHINO SERIES

POWER SAFE

DESCRIPTION

- Connector focus on USER SAFETY
  - First mate/last break
  - last mate/first break
- Derivated from 38999 series III
- Layout 17-E6

FEATURES AND BENEFITS

- Socket insert are IP2X (finger test)
- Crimp contacts
- Power 500V
- T = - 65°C / + 175°C / + 200°C
- Salt spray exposure 500h
- Sealing: IP68
- Durability: 500 cycles

DESCRIPTION

A combination of MIL-DTL-38999 & MIL-DTL-5015 technologies that provides a low cost solution for high power requirements while keeping the features and benefits these series are known for.

Incorporates MIL-DTL-38999 Series III shells and outer coupling:

- Providing shell-to-shell bottoming and EMI banding for EMI/RFI protection.
- Environmental sealing which will meet the 38999 requirements for humidity and submersion testing.
- Meets shock and vibration requirements of 38999.
- Shell sizes 25 and larger; allowing more options to carry higher power for your applications.
- Comes standard with over-molded coupling nuts which provide extra durability and grip.

Incorporates MIL-DTL-5015 Series inserts and backshell accessories:

- Available in familiar 5015 patterns as well as some new patterns allowing for higher amperage/ voltage requirements.
- Comes standard with a Silicone based insert material for higher CTI and service class, but will also be available with High Temperature Flouroelastomer or Neoprene inserts – giving some versatility in your applications, while providing an operating temperature rating from –65°C up to 200°C.
- Available with standard 5015 style backshells and rear accessories – giving the extra sealing and support needed in harsh environments.

KVTV CONNECTOR SERIES

MATRIX MIL-DTL-5015

DESCRIPTION

Amphenol'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.

FEATURES AND BENEFITS

- Medium to heavy weight cylindrical
- Seven mounting style in shell sizes 8 to 48. Contact sizes 0 to 16 in over 100 insert patterns
- Classes include aluminum or stainless steel shells, or firewall capability
- Completely sealed against environmental extremes
- Thermocouple pin and socket contacts are available

CONNECTOR OPTIONS

- Wall Mount Receptacle
- Cable Connecting Receptacle
- Box Mount Receptacle
- Jam Nut Receptacle
- Straight Plug
- Straight Plug with Self-Locking Coupling Nut
- Quick-Disconnect Plug with/without Lanyard
- Matrix 5015 Connector with RADSOK Contacts

DESCRIPTION

Amphenol offers the Matrix product line of MIL-DTL-26482, Series 2 Connectors. This series provides a bayonet coupling connector with crimp rear insertable, rear releasable contacts.

FEATURES AND BENEFITS

- Bayonet coupling connector with crimp rear insert, rear release contacts.
- Medium size, environmentally resistant connector
- Shells size 8 to 24. Contact sizes 20, 16, and 12.
- Recommended operating voltage to 1,000 VAC (RMS) at sea level
- Quick positive coupling assured by 3 point bayonet coupling system
- 34 insert patterns available from 3 to 55 circuits
- Various finishes are available

PRODUCT OPTIONS

- Wall Mount Receptacles, Narrow Flange and Wide Flange
- Cable Connecting Receptacle
- Jam Nut Receptacle
- Straight Plug
- Straight Plug with RFI Grounding Fingers
- Accessories and Tools

MATRIX MIL-DTL-26482 SERIES 2 CONNECTORS

MATRIX MIL-DTL-83723

DESCRIPTION

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. There are three coupling styles with multiple options:

BAYONET COUPLING

- Wall Mount Receptacle
- Jam Nut Receptacle
- Straight Plug
- Straight Plug, RFI Grounding

THREADED COUPLING

- Wall Mount Receptacle
- Jam Nut Receptacle
- Straight Plug
- Straight Plug, RFI Grounding
- Straight Plug, Self-Locking

QUICK-DISCONNECT COUPLING

- Quick-Disconnect Plug
- Quick-Disconnect Plug with Lanyard

DESCRIPTION

Amphenol's MIL-DTL-83723 Pyle connectors have proven technology for severe environments and are widely used in commercial and military aerospace markets. They incorporate many advantageous features, such as a unique threaded coupling mechanism, that provides greater resistance to decoupling which eliminates the need for safety wiring.

Amphenol/Pyle 83723 Series III high temperature styles are capable of operation at 260° C/500°F. A 100% scoop-proof version of the high temperature connector is also available under specification ESC11/Pyle HTK Series.

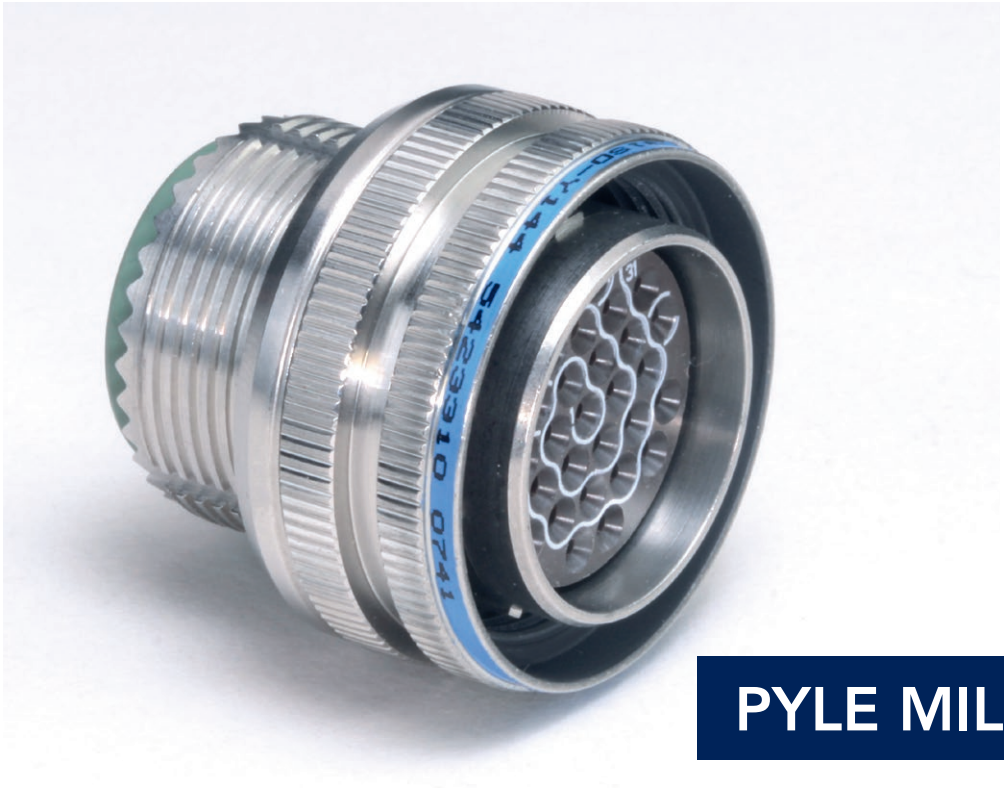
The Pyle 83723 family provides connectors in environmental, firewall and hermetic classes that exceed the most stringent specification requirements.

CONNECTOR OPTIONS

- Threaded Connectors
- Bayonet Connectors
- High-Temperature Connectors
- Hermetic Connectors

These connectors meet the requirements of the following manufacturer's specifications:

- Boeing BACC63CM/CN Firewall
- European ASD EN2997
- Rolls Royce/SBAC ESC10 and ESC11
- General Electric M50TF3564



PYLE MIL-DTL-83723

PYLE MIL-DTL-26500

DESCRIPTION

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. Amphenol® /Pyle® MIL-DTL-26500 connectors are medium sized connectors with a rugged design, lightweight construction and continuously dependable performance.

The product family options include:

- Aluminum Connectors
  - Military Classes R and G
- Stainless Steel Connectors
  - Military Class E
- Firewall Connectors
  - Military Class K
- 48 Series Receptacle Short Skirt
- Hermetic Connectors
  - Military Class H
- Contacts and Accessories
- Commercial Design with PC Tail Contacts
- BACC63 Boeing Specifications

DESCRIPTION

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

FEATURES AND BENEFITS

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

Shell Size	Current Rating (Amperes)	Contact Size
28	40	6
32	60	4
44	100	1/0
52	200	4/0

CLASS L
MIL-DTL-22992 CONNECTORS

POWER CONNECTORS 55181

DESCRIPTION

Mil qualified to MIL-DTL-55181, Amphenol's Power Connectors are designed with a center lock coupling screw that enables the connector to withstand high shock and vibration. They are also engineered with a weatherproof and polarized design. The connectors are used for interconnection of power & control equipment – especially in military communication systems.

FEATURES AND BENEFITS

- Mil qualified to MIL-DTL-55181
- Withstand high shock and vibration
- Weatherproof and polarized design

DESCRIPTION

Amphenol 164 series, qualified to MIL specification MIL-DTL-55116, are electrical audio connectors used in low voltage audio frequency circuits & applications. They are water resistant and employ three-point bayonet coupling for quick disconnect & self-wipe contact. They are used extensively in military communication equipment where high reliability is paramount & severe environmental conditions are encountered. They are intermatable with any other manufacturers product designed to MIL-DTL-55116.

FEATURES AND BENEFITS

- Qualified to MIL specification MIL-DTL-55116
- Water resistant
- Three-point bayonet coupling for Harsh environment

AUDIO CONNECTORS 55116

BREAKAWAY 10 PIN WATERPROOF CONNECTOR

DESCRIPTION

This blind mating and quick disconnect connector is the perfect solution for a customer looking for additional capabilities out of their current breakaway connectors. These connectors are backward compatible to the current versions. Product can be used with either a mating 10 pin connector; Stereo, or a 7 pin connector; Mono.

FEATURES AND BENEFITS

- Backward compatible to 7 Contact Version
- Stereo
- Water/Dust Resistant
- Quick Disconnect
- Blind Mating
- Available in both Solder and Quick Insulation Piercing Termination Models
- Capable of being Overmolded
- Available in both Shielded or Standard

DESCRIPTION

Designed specifically for legacy and new generation 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.

FEATURES AND BENEFITS

- Highly reliable & easy to use
- Interchangeable & intermateable with other pre-existing equipment in the field
- Crimp termination connection system with 3, Power (10 AWG) & 3 Control (16 AWG)
- Blind-Mate connection
- Configurable to PCB contacts; plating options available

CIRCULAR GALLEY CONNECTORS

RoHS-COMPLIANT PLATINGS ALTERNATIVE TO CADMIUM

DESCRIPTION

MIL-DTL-38999, Rev L has established new service classes for alternative finishes addressing these requirements for Cadmium replacement. Amphenol is using this and European Union Directive 2002/95/EC RoHS (Regulation of Hazardous Substances) as a guide to qualification for all domestic, global, commercial, industrial, & military specifications requiring the reduction or elimination of these restricted materials.

The Defense Logistics Agency (DLA) has added the following cadmium alternative finishes to MIL-DTL-38999, Rev L (and other connector specs):

- **Nickel Fluorocarbon Polymer**
- **Zinc-Nickel**

Amphenol has an offering for each alternative finish:

- **Durmalon**
- **Black Zinc Nickel**

Requirements	Cadmium	Durmalon	Black Zinc Nickel
Coupling Torque Post 500 hr. salt	■	■	■
Shell to Shell Conductivity <2.5 millivolts	■	■	■
Cycles of Durability 500 mates	■	■	■
Salt Spray Dynamic 500 hours	■	■	■
Temperature Rating 175° C	■	■	■
Non-Reflective	■	■	■
EU RoHS/ELV Compliant*		■	■
Non-Magnetic	■	■	■
De-icing Fluid**		■	■

DESCRIPTION

These connectors with reverse bayonet coupling are compliant to the VG95234 standard. Offering a high liability, they are coevally waterproof and resistant to vibrations and wear. They use the same installation dimensions as connectors according to MIL-C-5015, however they are provided with reverse bayonet coupling and ondular washer, which guarantee a fast and effortless locking/unlocking and avoid an unintentional unlatch due to heavy vibrations. Connectors are standardly delivered with grounding finger.

FEATURES AND BENEFITS

- Reverse Bayonet shell size 32
- Harsh environment
- Modular, more than 230,000 different layout configurations
- 5 different polarisations
- Module with contact size from AWG 23 to AWG 8
- Module for RJField, Quadrax, Micro coax and Twinax
- Fiber Optic: Luxcis®, Amphelux®, Elio®, MPO and M29504 Butt joint terminations
- Shunted modules
- IP protection class: IP 66 and IP 67

GCB-M

ECTA 133

DESCRIPTION

This connector was designed in accordance to EN 61984 and UL with its rugged design, convenient push-pull operation, wide range of contact sizes and high contact density. It provides an ideal component to use in a wide range of applications, for example:
Typical applications such as power supply and data transmission in shelter.

Serie 1331: power transmission connector (to 125 A) equipped with leading ground contact (and pilot contacts for the arrangement 605 for 100 A current and 706 for 125 A current).

Serie 1332: signal transmission connector (to 40 A) for data or signal transmission. The current ratings of the contacts also permit the connector to be used for low voltage transmission. Layouts 294 and 305 are equipped with power and additional pilot contacts.

ADDITIONAL CONNECTOR

in Composite **ECTA 544**

DESCRIPTION

Amphenol produces the ARINC 801 cylindrical fiber optic connector suite for aerospace and military applications. Based on the commercial ARINC 801 specification, this series features a removable alignment, sleeve retainer (ASR) for ease of termini end face cleaning, guide pins for precision alignment, and a scoop proof shell design. It is available in standard D38999 plug and wall mount shells. Inserts are available to support 2 to 32 channels and can support both PC and APC.

Amphenol also offers the companion ARINC 801 terminus, which uses a standard 1.25mm ferrule and sleeve that can be terminated with standard LC termination procedures. The terminus can be inserted or removed from the connector with a standard size 16 contact removal tool. The terminus is available in both multimode and single-mode versions. The fiber optic contact provides low insertion loss (0.3dB max, multimode) and back reflection (-55dB, APC). In addition to the standard PC end face option, Amphenol's ARINC 801 termini are offered with an APC end face for applications requiring reduced back reflection.

FEATURES AND BENEFITS

- Qualified to the ARINC 801 Specification
- Precision alignment and components provide excellent optical performance
- Supports APC termini for RF-over-Fiber and other applications requiring low back reflection
- Supports standard suite of 38999 backshells and accessories
- Removable ASR facilitates termini cleaning
- Scoop-proof design prevents termini end face from being touched by the front of the mating connector
- High-density arrangements up to 32-channels

APPLICATIONS

- Commercial Airframe
- Avionics
- Military Radar
- SATCOM Systems
- RF-over-Fiber

ARINC 801 FIBER OPTIC

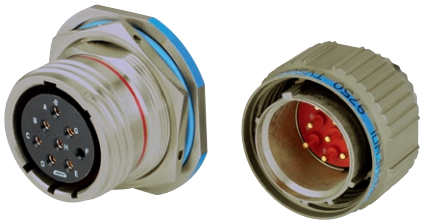
AMPHENOL HAS A LARGE RANGE OF VG-CONNECTORS AND IS ALSO THE PREFERRED SUPPLIER FOR THESE CONNECTORS.

All connectors are available in short delivery times and in small quantities.

VG95328
PT SERIE

VG95234
GCB SERIE

VG95319-1006/-1007/-1008
MIL 38999 SERIE III



VG95319-100/-101
TAC BEAM

VG96912
SJT SERIE

VG96513 IN PROGRESS
SIM

VG96938 IN PROGRESS
RJF-TV SERIE

VG95319-1011
BACKSHELLS

DESCRIPTION

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.

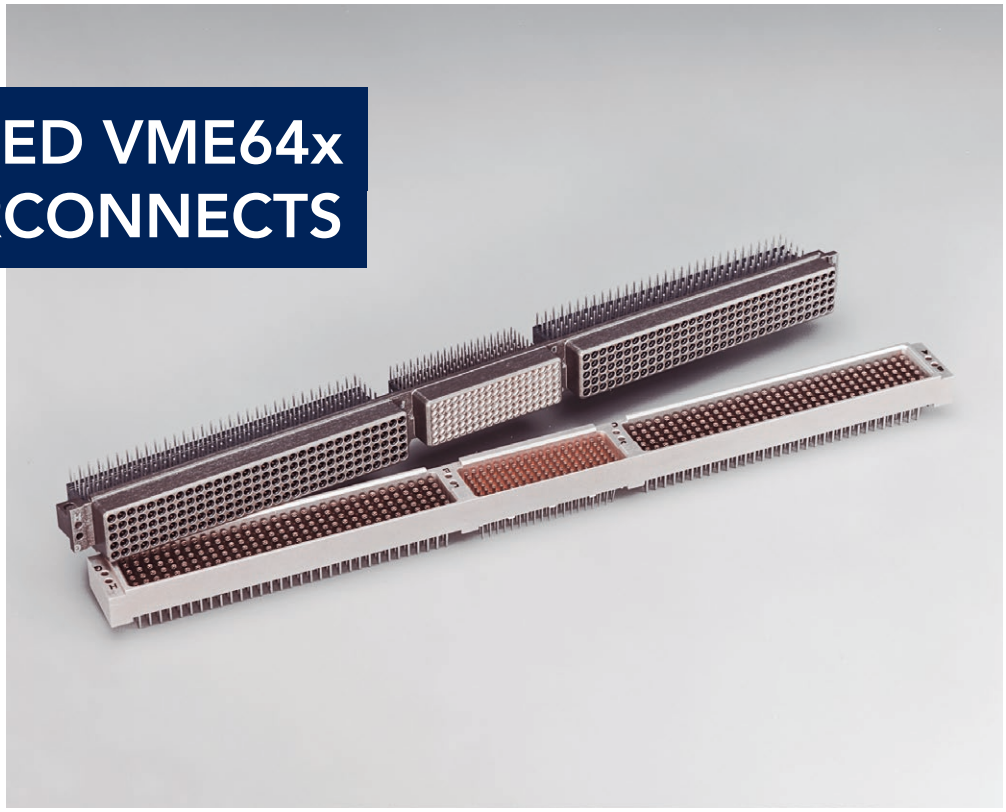
- Thousands of combinations of inserts are possible – tailored to meet user needs
- LRM interconnects can be designed in 1, 2, 3 (and more) bay configurations with many shell designs available
- LRM digital (brush contact) inserts can be combined with inserts for power, fiber optics, RF, high speed and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

LRM PRODUCTS

- Low Mating Force Connector with Bristle Brush Contacts
- LRM Connectors Chevron, Staggered, or GEN-X Grid
- LRM Connectors with Fiber Optic, RF, Power, or high- amperage RADSOK contacts
- Combinations of Power, Brush, Differential Pair, and Fiber Optic Termini
- High-Speed DigiStak and Gigastak Connectors capable of up to 6.25 Gb/s
- LRM Connectors with incorporated Flex Circuits

LRM CONNECTORS
LINE REPLACEABLE MODULE

RUGGEDIZED VME64x INTERCONNECTS



DESCRIPTION

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, such as the military and commercial aviation, military vehicles, and GPS markets. The Amphenol Ruggedized VME64x connector mounts to standard VME64x cards and backplanes, but it does not mate to other types of VME commercial connectors.

FEATURES AND BENEFITS

- Metal shells – mount directly to the standard VME card mounting holes and create a Faraday cage around the contacts, preventing ESD (Electrostatic Discharge) into the contacts (module only)
- Robust contact system with the durable brush contact as the primary interface
- 3 module inserts in one unified shell; each can have different interconnect combinations
- Inserts are designed to customer specifications
- Thru-hole solder tail or solderless termination is available on the backplane connector

DESCRIPTION

Originally co-developed with the U.S. Navy, the NAFI Connector product line includes multi-row, through-hole solder blade connectors and press fit tuning fork backplane connectors. Contacts arranged on a 0.100" x 0.100" grid.

Connector patterns containing multiple rows of contacts are easily produced and can include standard NAFI-style features such as guide pins and D-shaped polarizing keys.

FEATURES AND BENEFITS

- Available in 2 through 4 rows to offers maximum design flexibility
- Tuning fork and blade contact system is a proven technology for high reliability
- Low insertion force (2.25oz/contact) for easy mating
- Compliant pin press-fit, through- hole and flex circuit termination styles available to support a variety of design application requirements
- Rugged machined aluminum frames – Ensures excellent performance in harsh environments

NAFI CONNECTORS

UHD CONNECTORS

DESCRIPTION

The Ultra High Density (UHD) interconnect is a high reliability packaging solution for airborne, space, shipboard, and ground-based applications. With 80 contacts per linear inch, the UHD connector is tested and qualified to DSCC 89065. A modular approach allows for straightforward incorporation of signal, power, coax, and fiber-optic inserts, as well as EMI shielding, all within the same connector footprint. Contacts arranged on a staggered eight row 0.100" x 0.050" grid for optimized trace routing through the backplane.

FEATURES AND BENEFITS

- Compliant press-fit termination of backplane connectors provides a gas-tight interface with the printed circuit board without the need for soldering
- Tuning fork and blade contact system is a proven technology for high reliability
- Daughtercard connectors feature surface mount termination via rigid pins or flex circuit for maximum design flexibility depending on application requirements
- Rugged machined aluminum frames ensures excellent performance in harsh environments

DESCRIPTION

Amphenol reduces the pitch and increases the density of contacts with the brand new HDAS range. With its robust and simple design, high density and high performance in extreme conditions, HDAS is the right connector when installation, cost and reliability must be considered.

Markets and Applications:
Commercial avionics & airframe, military avionics & Airframe, C4ISR, Ground vehicles / On board computer, display units, actuators, engine, power units, landing gear

100% Optimized
- Lateral rails protecting male pins from external damages
- LCP material allowing all types of soldering processes
- Guiding/keying devices can be polarized in 6 positions within their own cavities: 36 keying possibilities per connector

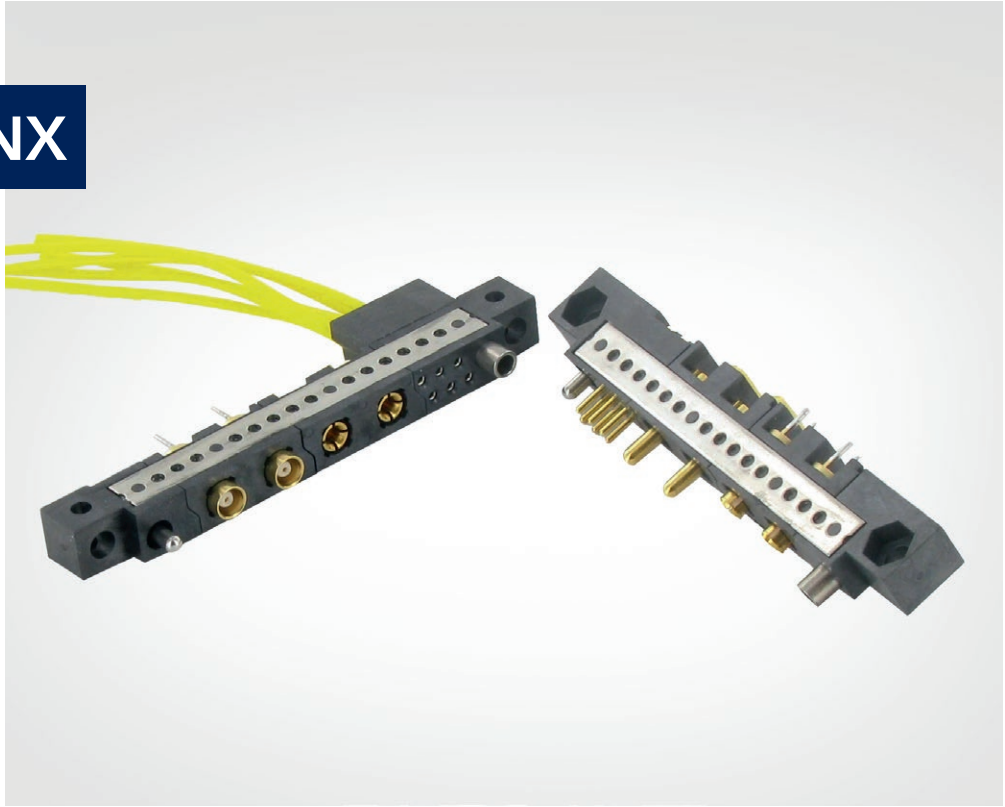
100% Performing
- STARCLIP socket technology by Amphenol; 6 tines for better reliability
- HDAS has surpassed all MIL-DTL-55302 requirements
- Dedicated to high temperature and vibration levels

HDAS Range:
- Arrangements: 7 sizes available from 3 to 6 rows
- From 50 to 253 signal contacts
- Terminations available:
  - Straight PC tail
  - Press fit
  - Male with right angle PC tails
  - Solder cup contacts
- Staggered grid pattern: 1,905[.075] spacing along the row, 1,905[.75] between rows, 0,9525[.0375] offset

Technical Features:
- 4,5A current rating per contacts
- 750V DWV
- 65/+150°
- 1,2mm[.0472] backoff / electrical security
- M55302 qualification + A400M & RAFALE vibrations / shocks

HDAS: THE HIGH PERFORMANCE AND COMPETITIVE PCB CONNECTOR

HILINX



DESCRIPTION

Amphenol has engineered a complete range of high & medium density, staggered grid, modular connectors. The HiLinX range provides a unique choice of solutions by allowing a mix of contact types: signal, power, fiber optics and coaxial lines

Modularity for custom designs!

With HiLinX, you specify

- Density: 2 pitches available
- Number of rows: 2 or 3 rows
- Signal contact position and number
- Special contact position and number
- Guiding and keying system

M55302 qualified:

Some HilinX arrangements are fully intermountable and intermeatable with M55302 connectors

- M55302/190 to /193
- M55302/57 to /66
- M55302/138 & /139

HiLinX range:

- 2 versions available with 1,905 [.075] or 2,54[.100] pitch
- All arrangements available, from 5 to 250 signal contacts, 2 or 3 rows
- Special contacts:
  - Power 20A
  - RADSOK 70A
  - AMPHELUX (optical termini)
  - Coaxial
- Terminations available:
  - Straight PC tail / Right angle PC tail
  - Press fit
  - Crimp termination / Solder cup
- Staggered grid pattern: 1,905 [.075] spacing along the row, 1,905 [.75] between rows, 0,9525 [.0375] offset or 2,54 [.100] spacing along the row, 2,54 [.100] between rows, 1,27 [.0500] offset

Technical features:

- 3A/5A current rating per contacts
- 750V/1000V DWV
- 65/+150°
- 0,8mm[.031] to 1,3mm[.051] backoff / electrical security
- STARCLIP socket technology 6 tines for better reliability
- M55302 qualified + RAFALE vibrations / shocks

DESCRIPTION

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, and many more applications.

FEATURES AND 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

M55302 LOW MATING FORCE (LMF) RECTANGULAR CONNECTORS

BRUSH RACK AND PANEL CONNECTORS

DESCRIPTION

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 AND BENEFITS

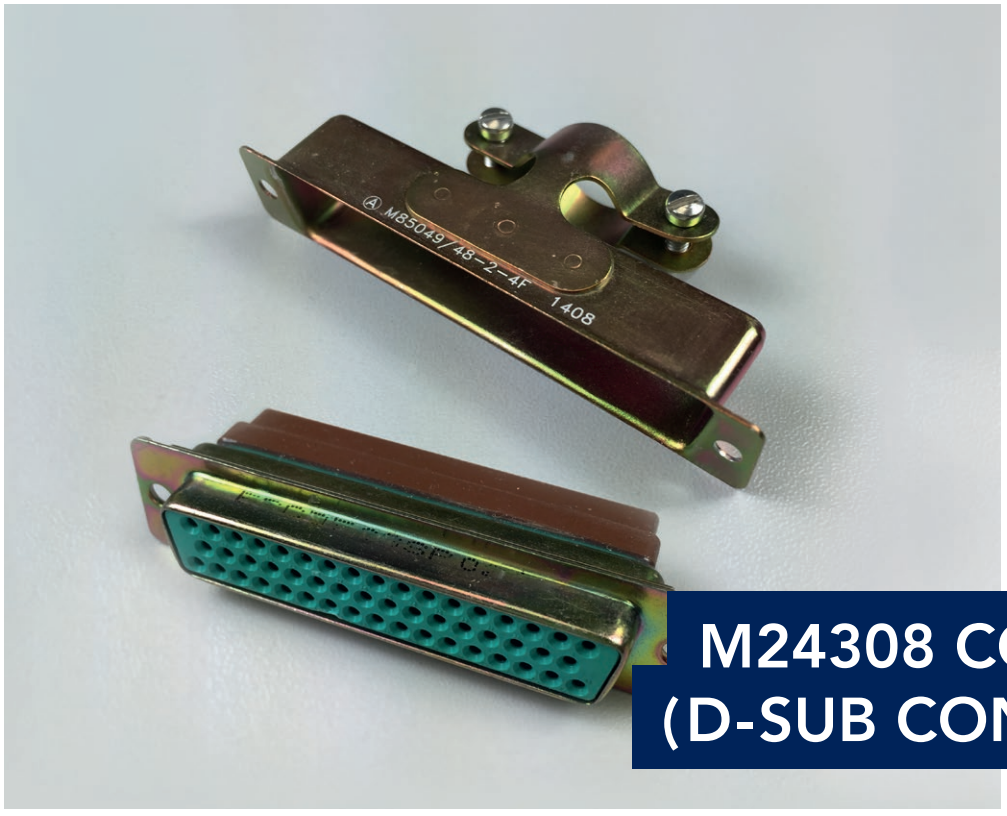
- High performance B3 brush contacts
- 0.100 inch x 0.100 inch square grid footprint
- Environmentally sealed at connector interface when mated (optional feature)
- Environmentally sealed connector mounting interface
- EMI protection is available at mounting surfaces and connector interface
- ESD protection 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

DESCRIPTION

Qualified to MIL-DTL-24308, Amphenol's D-Sub Connectors are sub miniature rack & panel type connectors with polarized shells. They use pin and socket machined contacts that provide high reliability and density for the connectors. With its versatile design, these high-performance connectors are used in a variety of applications where weight and dimensions are critical factors.

FEATURES AND BENEFITS

- Mil qualified to MIL-DTL-24308
- Durability: 500 mating cycles
- Temperature: - 55 Deg C to + 125 Deg C
- Over 200 part numbers available



M24308 CONNECTOR (D-SUB CONNECTORS)

LMD AND LMS MODULAR

DESCRIPTION

The LMD Connector Series was designed by Amphenol to provide flexibility in the assembly of wire harnesses that are used in instrumentation and avionic control environments. The modular design of the LMD provides rack and panel or cable-to-cable attachment.

FEATURES AND BENEFITS

- Reduces assembly and production costs
- Eliminates costly PC board and associated hardware
- Reduces inventory levels and associated costs
- Allows for a variety of circuit configurations
- Permits ease of circuit upgrading
- Facilitates equipment maintenance

LMS CONNECTORS

- Supplementing the LMD connector family, Amphenol offers the LMS in-line splice connector, a low cost interconnect that incorporates the LMD Modules and contacts.
- Standard LMS splice connector: 3-piece assembly with module removal tool access.
- Tool-less splice connector – 3-piece assembly with a push-button module release for easy module removal
- Two-piece bracket available for panel mounting
- Used in wire harness, instrument and equipment terminations and test points

DESCRIPTION

The Sim2B2 Series (ARINC 809) connector is a mono modular, push-pull connector that is ideal for inflight entertainment systems, cabin service systems, and other interconnect system requirements.

FEATURES AND BENEFITS

- Fully qualified and complaint with ARINC 809 specifications
- Tested and qualified per EN4165 Series specifications
- Lightweight and robust thermoplastic; metalized for shielding
- More than 20 different inserts to choose from including butt joint and expanded beam optical contacts
- Fixing accessories, multiple colors, flight caps and 3-pin quick install versions are also readily available

SIM2B2 SERIES (ARINC 809)

3559 SERIES

DESCRIPTION

Designed to require no tool for installation: Unique Snap and Fit system, Rectangular, Modular, Push Pull locking, derived from SIM / EN4165, ABS 1152 qualified and BACC65 BP&BR. More than 10 different insert configurations for signal or power. Contacts are standard SAE 39029 type or EN3155.

FEATURES AND BENEFITS

- Modularity (EN4165 modules)
- Sealed connection – IP66 / IP68 / IP69K
- Lightweight composite
- 3 pins fixing on structure or Feedthru mounting
- Standard modules fitted with MIL-C-39029 / EN 3155 crimp contacts for electrical connection (size 23 / 22 / 20 / 16 / 12 / 8)
- Also available : modules for RJ45, optical termini Lumiere®/Elio® or Amphelux®/Luxcis®, Quadrax, Twinax, Coax, Triax ...
- Operating Temperature: -55°C to +175°C (permanent)
- Conform to ABD 031 and FAR 25853

ADDITIONAL PUSH PULL CONNECTORS

3357 according to ABS1019: also existing in PCB Version

DESCRIPTION

Intermateable and interchangeable with other ARINC 810 galley connectors, Amphenol's APeX Galley Connector, Rectangular is a robust, connector that uses overmold technology to set it apart from the rest. It also features a guide pin for quick and simple blind mating.

FEATURES AND BENEFITS

- Intermateable & Interchangeable with other pre-existing equipment in the field
- Overmold Technology used on inserts: sealing & reliability
- Blind-Mate connection: guide pin feature for quick and easy mating

ARINC 810 GALLEY CONNECTOR/EN 4644

SIMPLUS

DESCRIPTION

Designed and qualified to EN4165 European military aerospace standards, Amphenol's new Simplus connector is a modular, multi-functional rectangular connector geared at the US Com-Air and Military markets. While Simplus is similar to MIL-DTL-38999 in performance, the product provides additional benefits with its small footprint and versatility, making it a very competitive alternative for a wide range of applications.

Simplus is comprised of shells and modules, which together create an integrated solution for advanced signal and power requirements – all at a fraction of the space typically required for the same results.

FEATURES AND BENEFITS

- Custom per customer requirements
- Modular, multi-functional rectangular connector
- Consists of shells and modules, which together create an integrated solution
- Supports advanced signal and power requirements in a small space
- Flexibility and simplicity

ADDITIONAL CONNECTORS

SIM (2Modules/4Modules) according to EN4165: in composite or metal (VG in progress)

DESCRIPTION

Amphenol connectors, Series 1900, standard version meet the requirements of EN3545 AECMA standard.
Standard 1900 connectors are made of thermoplastic and available in two versions:

- sealed grommets on the conductor
- unsealed grommets on the conductor

The connected assembly is made up of one connector with (P) pin contacts and one connector with (S) socket contacts that are fully EN3155 compliant.

Connectors may be fitted with:

- Crimp contacts
- Straight or right angled contacts to be soldered onto PCB
- Solder cups
- Quadrax or derived contacts
- Contacts for aluminum cables

Mating and locking of connectors is ensured by two means:

- Screw type polarizing / locking posts providing up to 36 keying combinations
- 1/4 turn locking system providing up to 36 keying combinations

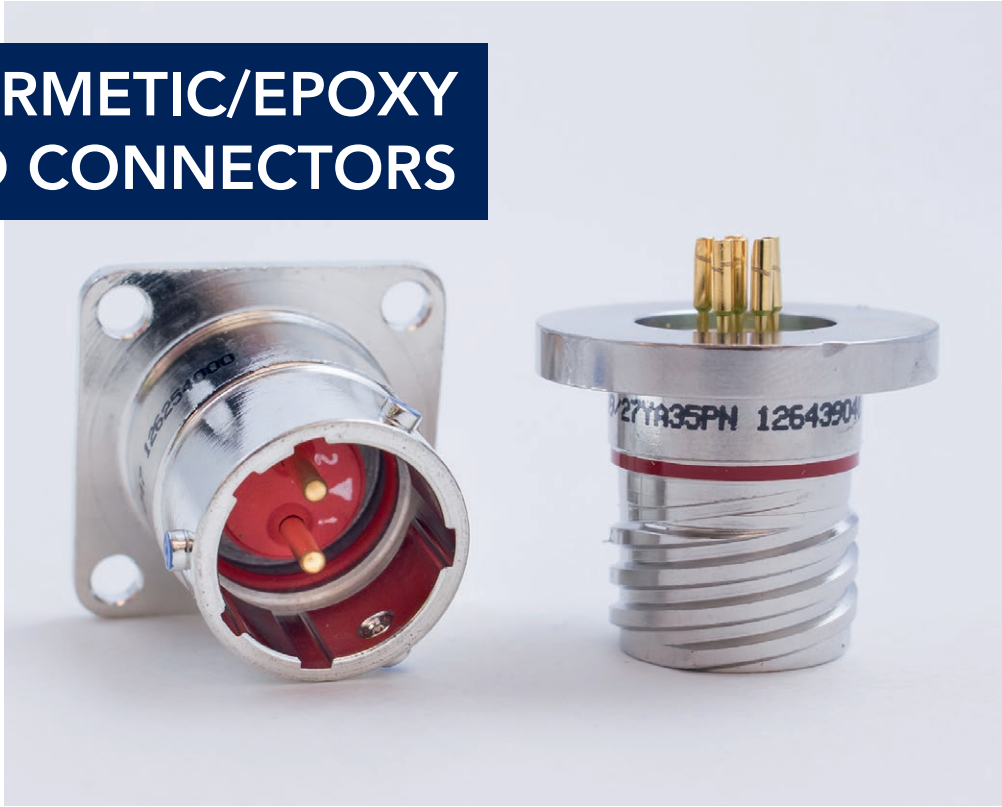
Coupling torque for locking of connectors: from 0,6 to 1 Nm (screw type only). Pin polarizers are also used to fasten the connectors onto a panel (thickness .063 inch max.) with split nuts (a) and lock-washers (b). The coupling torque is between 1,25 and 1,50 Nm.
In order to meet various requirements, there are 9 versions available for copper cable contacts and 3 versions available for aluminum cable contacts. Complete interfacial sealing is provided by compression of a gasket.

ADDITONAL CONNECTORS

Elio® Optic Version according to ABS1696

1900 CONNECTORS – EN3545

HERMETIC/EPOXY SEALED CONNECTORS



DESCRIPTION

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 FEATURES

- Leak rate of 1X10-7 cc He/sec or less
- Fused glass insert in stainless steel shell
- **Operating Frequency:** 0-500 MHz
- **Insulation Resistance:** 1000 mohms at 25°C
- **Dielectric Withstanding Voltage:** Center to outer 500 VAC RMS at sea level
- **Contact Resistance:** Center and outer at 1 amp, 55 millivolts max. voltage drop at 25°C.

EPOXY-SEALED FEATURES

- Leak rate less than 1X10-5 cc He/sec
- Same epoxy as used on EMI filter connectors
- Maintained after temp cycling, 5 cycles -55 to +125°C
- Custom designs available

CONNECTOR OPTIONS

- Special flanges
- PC board mounting stand-offs
- PC board mounting tails
- EMI filtering
- Through-bulkhead configurations
- Crimp termination

DESCRIPTION

Amphenol can offer hermetic connectors or feedthroughs incorporating robust and reliable glass to metal seals (GTMS). The seals can be manufactured in a variety of materials including stainless steel, titanium or duplex steels and can be compatible and intermateable with standard series connectors such as Mil-DTL-38999 or offered in custom configurations, hermetic versions of M12 connectors are also avaliable. The relatively short axial seal length allows for low enclosure intrusion whilst maintaining contact position under extremes of shock & vibration.

The connectors can be designed to withstand pressure differential exceeding 60,000 psi (400 MPa) and/or extremes of temperature to above 900 deg C. Helium leak rates better than 1x10-9 mbar.litres/sec are achieved.

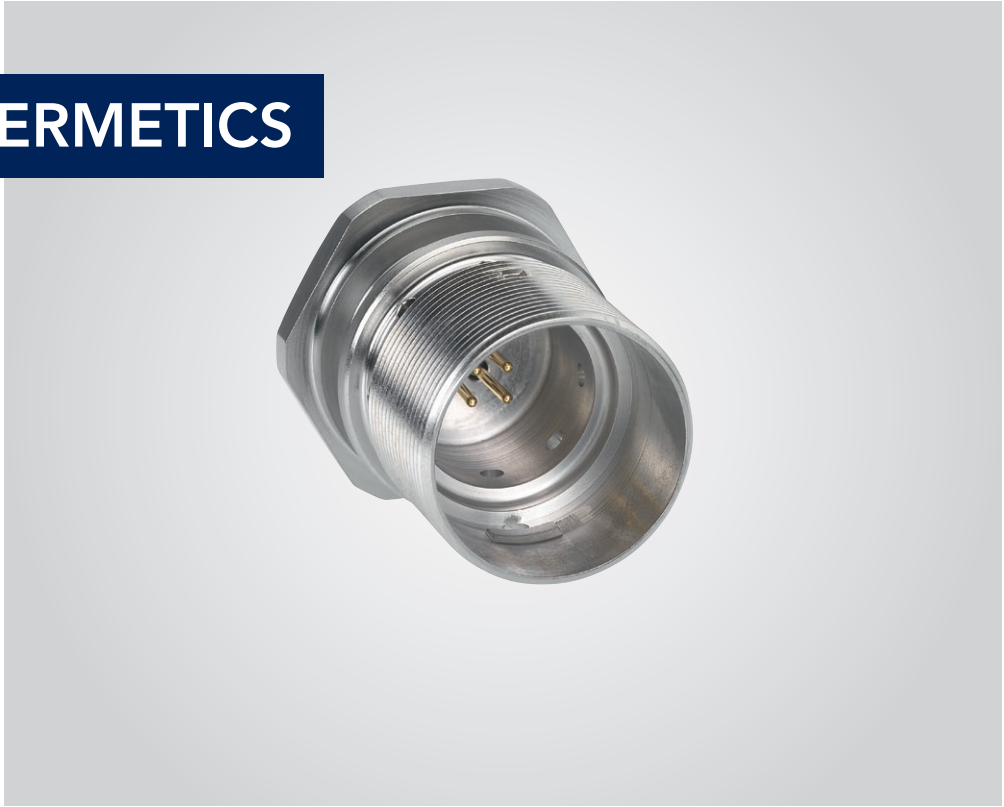
Bespoke features, including EMI filters, localised electroplating, earth bonding pins and customised conductor plating (e.g. hard gold / soft gold combinations on the same conductor) can be incorporated.

FEATURES AND BENEFITS

- Pressure differential capability to > 60,000 psi (400 MPa)
- Standard mil spec connector series mateability or bespoke / custom interfaces
- Product specific qualification and acceptance
- Temperature extremes of -270 deg C to + 950 deg C can be tolerated
- Bespoke functionality (e.g. EMC filers / Surge arrestors) can be incorporated
- Suitable for harsh environments where fluid separation is required.
- Minimises water / water vapour ingress
- Helium leak rates better than 1x10-9 mbar. Litres/sec

HERMETIC (GLASS TO METAL SEAL) CONNECTORS

CUSTOM HERMETICS



DESCRIPTION

Many applications can benefit from the customised functionality offered by Amphenol's hermetic seals. They offer reliable fluid separation solutions under extremes of pressure and temperature and can incorporate additional functionality such as point of entry signal conditioning (e.g. EMC filters or surge arrestors) or localised surface treatments for reliable earth bonding. The seals can be manufactured in a variety of materials including stainless steel, titanium or duplex steels and can be compatible and intermateable with standard series connectors such as Mil-DTL-38999. The relatively short axial seal length allows for low enclosure intrusion whilst maintaining contact position under extremes of shock & vibration.

Amphenol can conduct product or programme specific qualification and acceptance activities to support customer development lifecycles.

FEATURES AND BENEFITS

- Pressure differential capability to > 60,000 psi (400 MPa)
- Bespoke / custom interfaces
- Standard connector series mateability
- Product specific qualification and acceptance
- Temperature extremes of -270 deg C to + 950 deg C can be tolerated
- Bespoke functionality (e.g. EMC filers/ Surge arrestors) can be incorporated
- Suitable for harsh environments where fluid separation is required.
- Minimises water / water vapour ingress
- Helium leak rates better than 1x10-9 mbar. Litres/sec

DESCRIPTION

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-type circulars can be incorporated with filter devices:

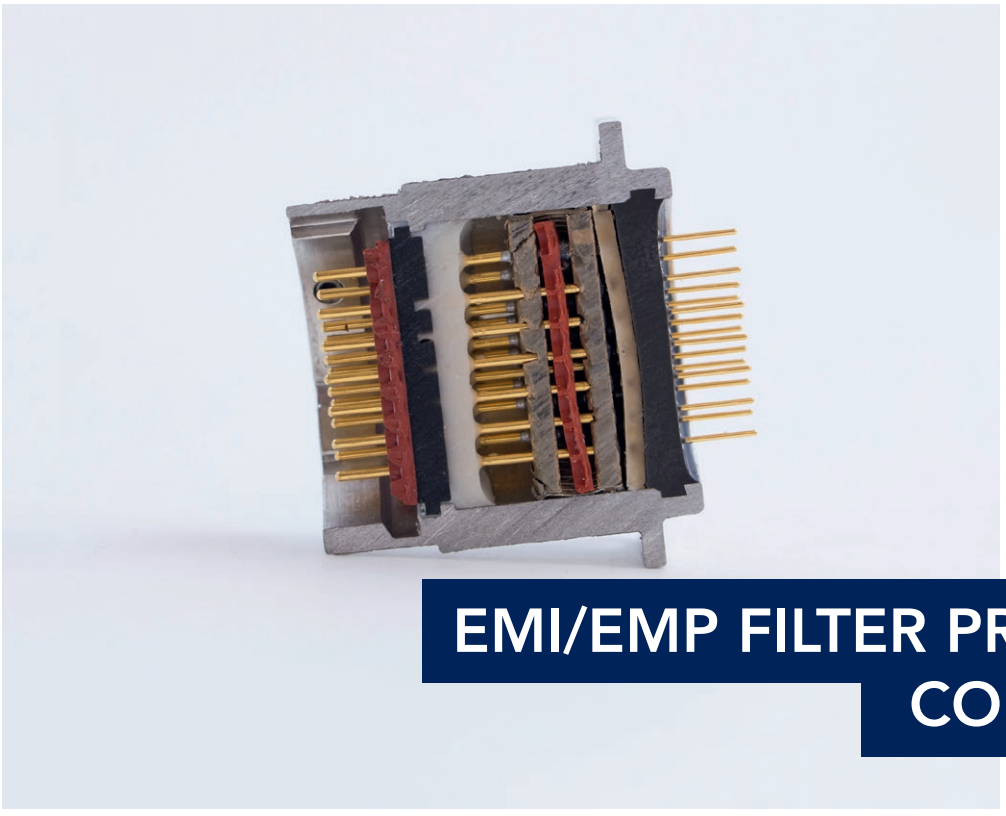
- MIL-DTL-38999
- MIL-DTL-26482
- MIL-DTL-83723
- MIL-DTL-5015
- MIL-DTL-27599
- MIL-DTL-26500
- 2M Connectors
- HD38999

FILTER CONNECTOR ADVANTAGES

- Reduction in overall weight and space with the elimination of external filter circuits
- Reduction of solder junctions
- Increase in reliability due to fewer connections
- Fragile filter elements protected by connector shell from handling and environmental damage
- Pre-testing from factory and ready for installation

FILTER CONNECTOR OPTIONS

- High Speed Filter Connectors
- Filter Plug Connectors
- Filter Adapters
- Header Assemblies
- Diode Connectors
- MOV Connectors
- Energy Shunting Assembly (ESA) Connectors



EMI/EMP FILTER PROTECTION CONNECTORS

RECTANGULAR EMI & EMP INTERCONNECT

DESCRIPTION

Custom Engineered EMI & EMP Rectangular Interconnect offers superior performance and lower overall cost over board level filters.

FEATURES AND BENEFITS

- Stress isolated solderless filter design results in superior physical and thermal shock performance
- Removable diode design enables customer field repairability
- Physically protected and fewer filter elements results in a more cost effective solution
- Reduction in space and weight leads to smaller overall Avionics box solution.

DESCRIPTION

Amphenol offers the AquaLink®, a cost-effective series of dry-mate submersible fiber optic connectors for underwater applications. The FS140 AquaLink® has been designed for pressures up to 4,500 psi/300 bar (mated) which is adequate for 10,000 feet (3,000 meters) of water. The open mated receptacle supports pressures up to 450 psi.
The standard AquaLink® supports up to four singlemode or multimode fiber optic contacts with additional channels available upon request. Using precision ceramics, the AquaLink® provides excellent optical performance with insertion losses of 0.3 dB typical and 0.75 dB maximum. The AquaLink® is also easy to terminate, requiring standard fiber optic tools and training. The AquaLink® is offered in a variety of materials including stainless steel 316, inconel 718 and marine bronze.

FEATURES & BENEFITS

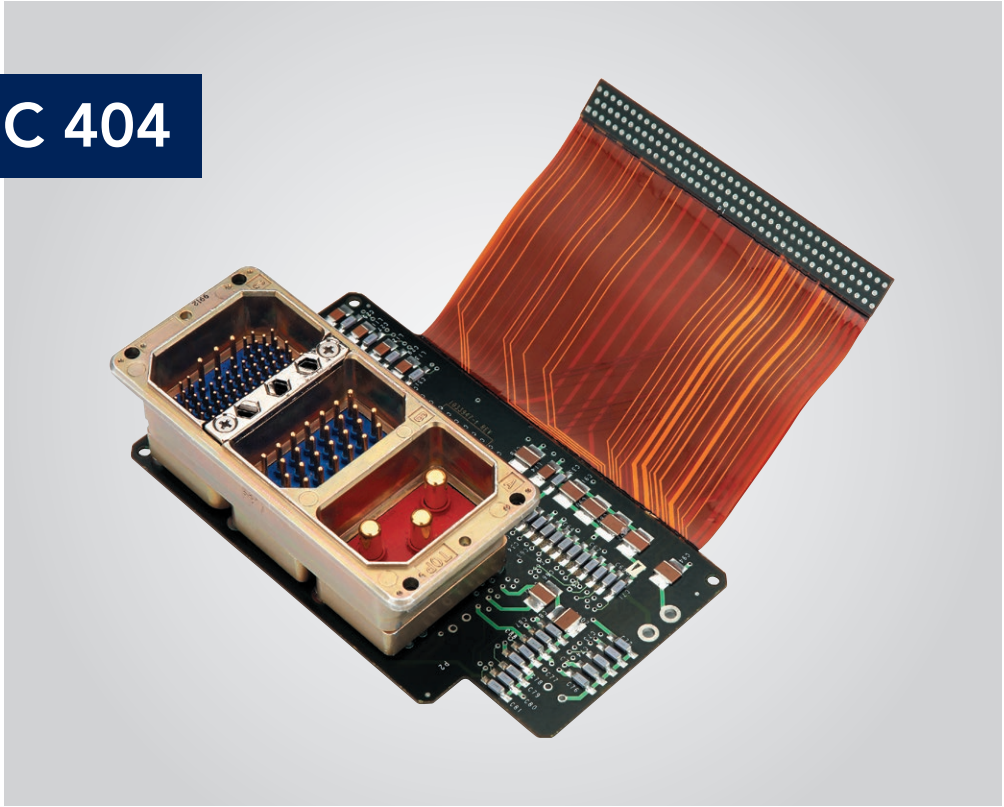
- Cost-effective multi-channel underwater fiber optic connector
- Supports applications up to 10,000 feet
- Easy to terminate using standard fiber optic tools and training

APPLICATIONS

- Tidal Power Generation
- Underwater ROVs
- Subsea Tiebacks
- Seabed Systems
- Submerged Sensor Systems

AQUALINK® FS140

ARINC 404



DESCRIPTION

ARINC 404 connectors and the Military equivalent MIL-DTL-81659 are a long time standard in both military and commercial aviation LRU's. These connectors come in 4 sizes that can hold up to 424 individual contacts. Amphenol is the world leader in the filtering of this series and has many capabilities to meet our customers varied requirements. This includes, but is not limited to, Pi, C, LC, T filters as well as the addition of transient suppression diodes to allow for the successful EMC test requirements of DO-160.

MATERIALS AND PLATING

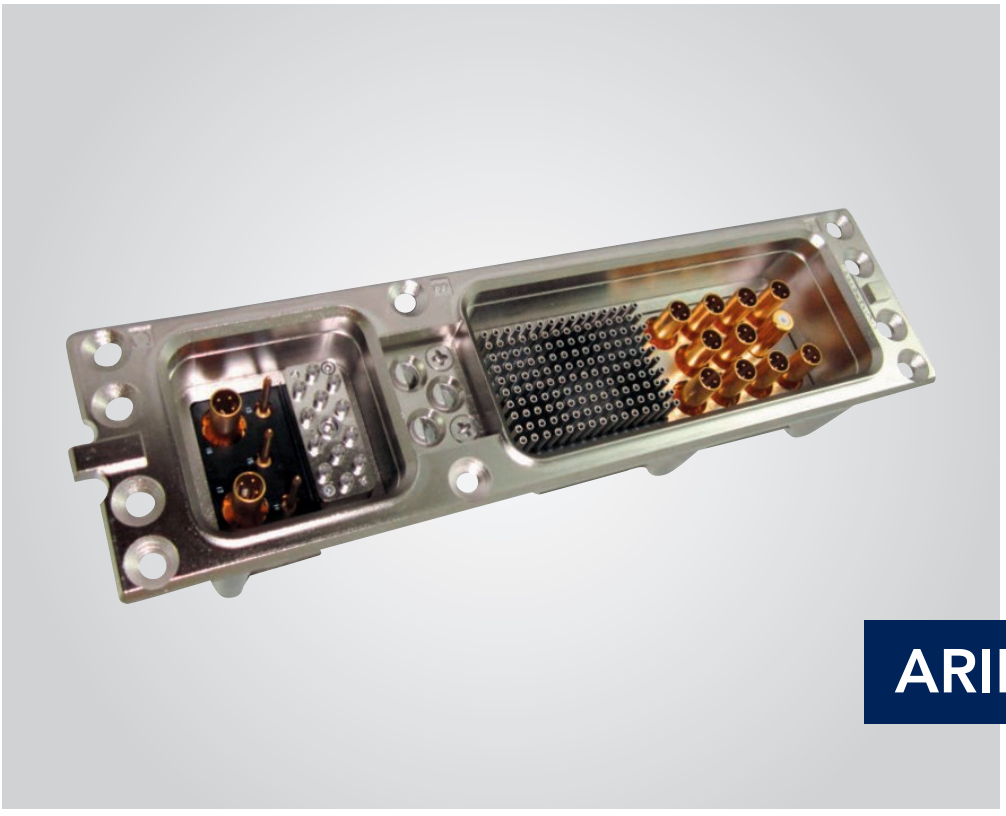
- Shell – Aluminum alloy
- Polarizing Keys – Aluminum alloy electroless nickel
- Insulators – Glass filled plastic
- Seals – Silicone/Fluorosilicone elastomer blend
- Contacts – Copper alloy gold plate

DESCRIPTION

ARINC 600 connectors are the recognized standard rack and panel interconnect system for use in commercial avionics. These connectors come in 3 sizes that can hold up to 800 individual contacts. Amphenol is the world leader in the filtering of this series and has many capabilities to meet our customers varied requirements. This includes, but is not limited to, Pi, C, LC, T filters as well as the addition of transient suppression diodes to allow for the successful EMC test requirements of DO-160.

MATERIALS AND PLATING

- Shell – Aluminum alloy
- Polarizing Keys – Aluminum alloy electroless nickel
- Insulators – Glass filled plastic
- Seals – Silicone/Fluorosilicone elastomer blend
- Contacts – copper alloy gold plate



ARINC 600

RF/ MICROWAVE MIL-SPEC CONNECTORS

DESCRIPTION

Amphenol offers a full line of RF/ Microwave Mil-Spec coaxial connectors, components and adapters for military, satellite and aerospace applications. Amphenol can be relied on for precision, innovation and reliability.

FEATURES AND BENEFITS

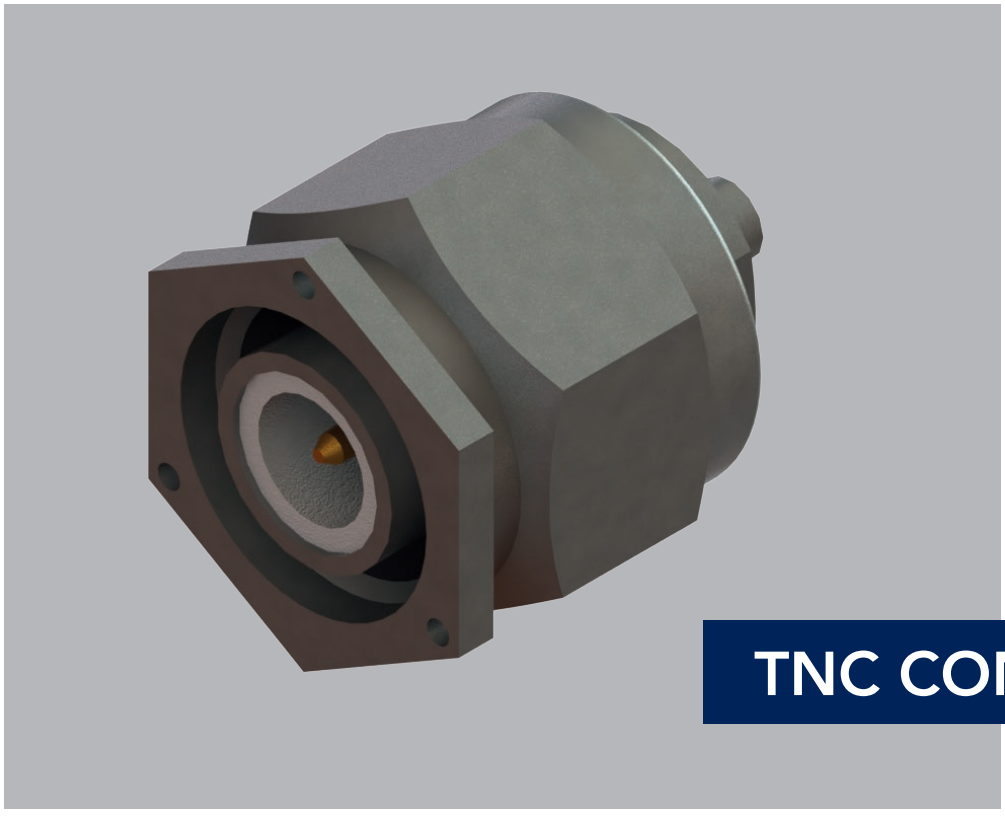
- MIL-PRF- 39012, MIL-PRF-55339, MIL-C 83517, MIL-D-39030, MIL-A-3933, MIL-PRF-31031, DSCC approvals
- Amphenol has the most extensive RF connector MIL-SPEC product offering of any supplier
- Amphenol has a long history of supporting DLA and promoting the standardization of RF connectors and components
- Only DLA approved source for M3933/30 (SVK) attenuators to 32 GHz

DESCRIPTION

Designed as a threaded version of the BNC, the TNC series features screw threads for mating. TNC are miniature, threaded weatherproof units with a constant impedance of 50 Ohms and operate at DC to 11 GHz. As a ruggedized version of the BNC, the TNC features a threaded coupling that offers extra mating stability.

FEATURES AND BENEFITS

- Frequency range DC to 11 GHz
- Threaded coupling interface ensures connector will not de-couple in vibration-intensive applications
- Miniature, threaded weatherproof units



TNC CONNECTORS

MULTIPORT CONNECTORS AND CONTACTS

DESCRIPTION

High Density Interfaces provide connectivity and maintainability with quick mate/de-mate of multiple cable assemblies. High performance M8 Multi-Port, Mini-Multi-Port (MMP) and BMB 38999 contacts fit standard and custom connector shell designs and provide broadband performance up to 40 GHz.

These High Density Interconnect products have been developed to provide extended life and full performance in harsh environments. Sealing features are built into the contact interfaces and connector shells, providing redundant assurance of long-term performance in fielded systems that make them very popular in the military aerospace market.

Times Multi-Ports have logged countless flight hours on F35, F22, F18, E2, EA6, AH64 and other aircraft. They are used in mobile "quick-reaction" systems, supporting simple equipment installation in a range of vehicles. Times has supplied broadband High Density Interface Multi-Port Interconnects since the early 1990's – an unmatched, real-life pedigree.

FEATURES AND BENEFITS

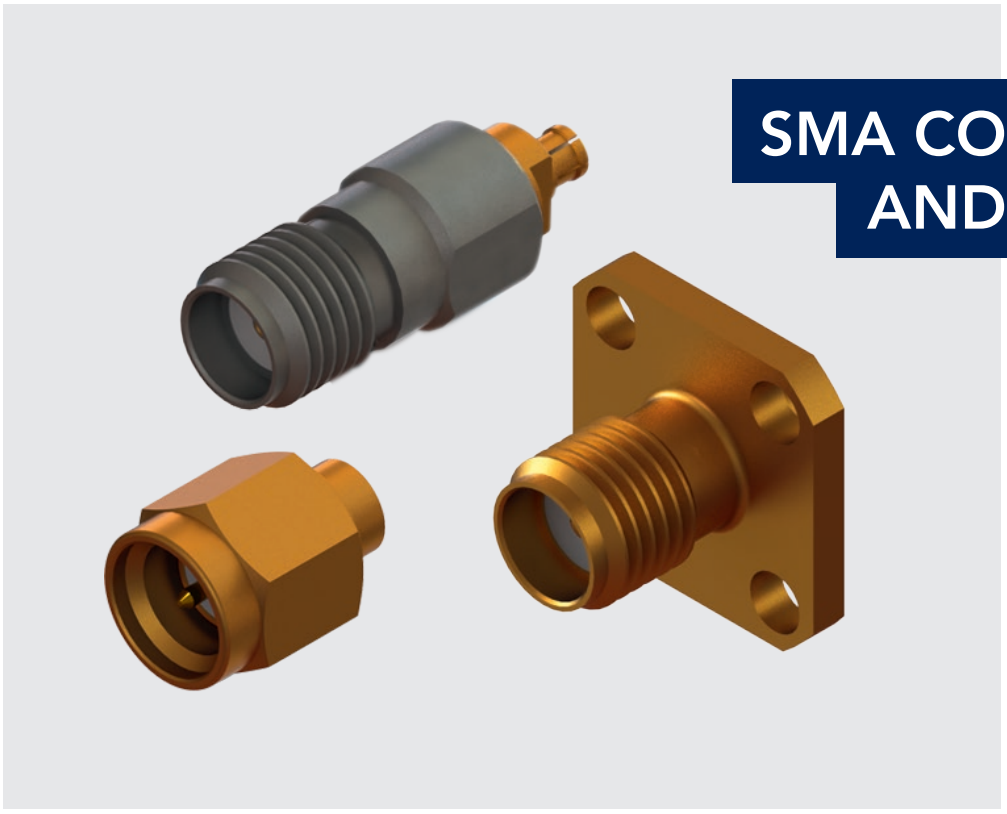
- Interchangeable connector front ends
- Drastically reduces panel space requirements for multiple connector outputs/inputs
- Minimize box installation clearances for connections
- Prevents cross connected cable assemblies
- Improves overall system maintainability
- Reduce costs and downtime associated with equipment installation and removal
- Eliminates the need to Torque or Lockwire individual connectors

DESCRIPTION

SMA (Subminiature version A) utilizes a threaded interface, 50 Ohm SMA connectors are precision subminiature units that provide excellent electrical performance from DC to 26.5 GHz. These high-performance connectors are compact in size and mechanically have outstanding durability.

FEATURES AND BENEFITS

- Broadband performance DC to 18 GHz with low reflection stainless steel construction and 1/4-36 threaded coupling offers high performance in a compact design
- High frequency versions (up to 26.5 GHz) available
- Available for .047, .085 and .141 diameter semi-rigid cables and all the standard flexible cables including double shielded RG-316.
- Adapters available for BNC, SMP, SMPM, TNC and more!



SMA CONNECTORS AND ADAPTERS

IN SERIES AND BETWEEN SERIES ADAPTERS

DESCRIPTION

Amphenol carries an extensive line of In-series and Between-series adapters. Adapters are commonly used in applications requiring 2 dissimilar RF interfaces to be connected. Hermetic, bulkhead, T shaped, flange mount and panel mount solutions are available.

FEATURES AND BENEFITS

- Between series adapters include BNC, 2.92mm, SMA, TNC, SMP, SMPM and more!
- Female to Male In series adapters
- Extensive line of DLA qualified M55339's available

DESCRIPTION

Amphenol manufactures a broad line of RF terminations and attenuators available in SMA, SMP, SMPM, 2.92mm series and more!

FEATURES AND BENEFITS

- SMA, TNC, Type N, 2.92mm, 2.4mm
- Nominal Impedence: 50 ohms
- Frequency Range: DC – 50 GHz
- Meet Requirement of M3933 /M39030

COMPONENTS: TERMINATIONS & ATTENUATORS

M81714 SERIES I TERMINAL JUNCTION MODULES

DESCRIPTION

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 AND BENEFITS

- Mil-T-81714 Approved: Meets high quality standards
- M39029/1 contacts: Meets military specification Mil-C-39029
- Integral Socket/Bus Bar: Assures electrical and mechanical integrity over long product life
- Integral Contacts: 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
- Multiple product types
  - Wide range of products to choose from
  - Four standard sizes
  - Accommodates 12-26 AWG wires
- High Density Modules: Conform to all dimensions and performance requirements of Mil-T-81714/17
- Class D Module System: Combines max high temperature and high fluid resistance performance parameters previously divided among three module classes: A, B, C
- Electronic Systems
  - Modules can be supplied with a variety of diode, resistors, capacitors, and fuses
  - Meets electronic parameters of Mil-T-81714/24

DESCRIPTION

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 AND BENEFITS

- Mil-T-81714 Approved: Meets high quality standards
- M39029/22 contacts: Meets military specification Mil-C-39029
- Multiple product types
  - Wide range of products to choose from
  - Four 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
- Board Mount Pin Modules
  - Provided in solder pin version that mounts directly to printed circuit boards
  - Eliminates need for mounting track

M81714 SERIES II TERMINAL JUNCTION MODULES

MIL-PRF-12883 RELAY SOCKETS

DESCRIPTION

Amphenol Relay Sockets are manufactured to MIL-PRF-12883 specifications, plus specialized requirements, and are supplied in a broad range of military standard and special configurations and styles for 2 through 25 amp operations. Relay Sockets feature state of the art ultrasonically bonded interfaces between the dielectric components, which eliminate air paths and provide protection against moisture and degradation. The product line offers: Low Profile, Extended Height, Micro Miniature, Board Mount, Track Mount and Solder Termination relay sockets options.

FEATURES AND BENEFITS

- Low profile-available in all military configurations; configured to a minimum size & weight & accept the MIL-C-39029/29 contact family
- Extended profile allows for contact standardization; configured to accept the longer MIL-C-39029/5 contact
- Socekts available with fixed or loose mounting studs; can be top or bottom mounted
- Designed for MIL-C-39029 contacts; standardization simplifies product
- Polarization in accordance with MIL Spec requirements; provided by specific contact configuration and/or polarizing pins

DESCRIPTION

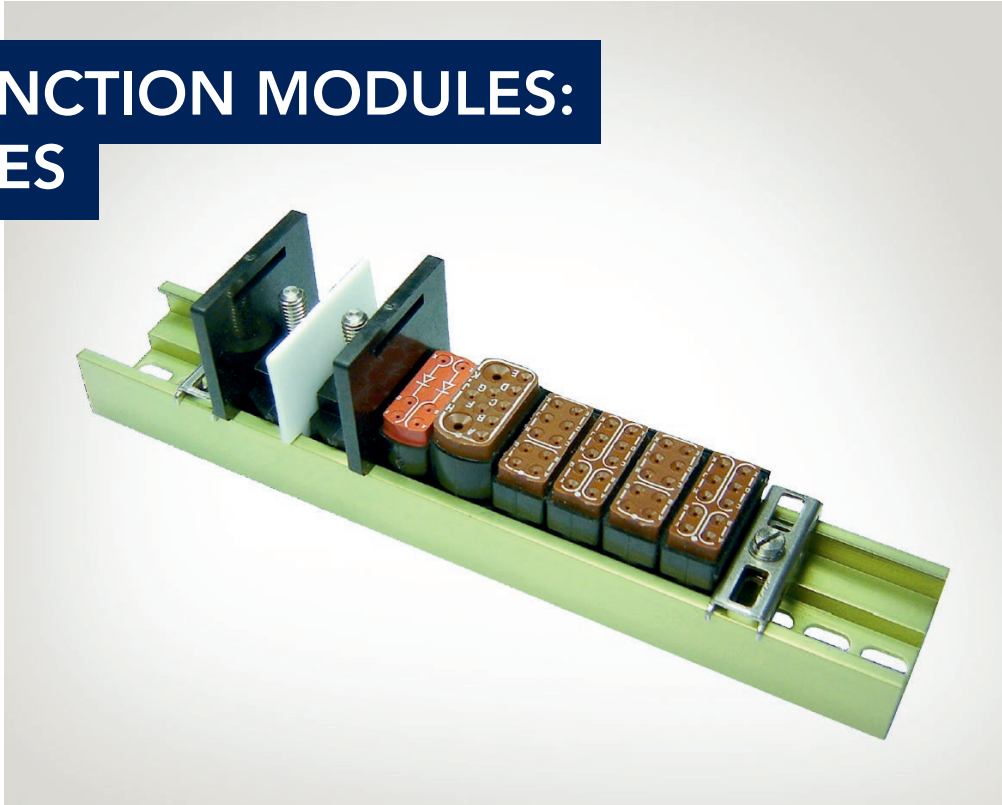
Amphenol's Quick Mount relay sockets snap mount into standard aircraft panel cutouts and eliminates all socket-to-bulkhead mounting hardware. This simplifies the installation and dramatically reduces weight and installation cost. Sockets meet the applicable performance and dimensional requirements of MIL-PRF-12883 and are compatible with MIL SPEC approved relays from any manufacture. Can be utilized in existing avionic systems with standard slotted panel cutouts.

FEATURES AND BENEFITS

- Easy installation: A heel and toe snap-in system allows the socket to be mounted to the panel without hardware and held securely in place
- Lower installation cost: Reduction of over 45% in socket installation time due to the elimination of loose hardware
- Snap-in relay to panel mounting & pre-assembled relay hardware: Eliminates the logistical and safety issues related with loose hardware
- Lightweight: The elimination of the mounting hardware & streamlined polyetherimide body combine to reduce the weight by 30 to 40% compared to traditional relay sockets

QUICK MOUNT RELAY SOCKETS

QUICK JUNCTION MODULES: 1100 SERIES



DESCRIPTION

Removable Distribution Modules Type 1100 are mounted on rails by sliding them inside a metal dissymmetrical rail, and maintained on each side by an end stop. End stops may be moved a few millimeters to extract a module by rotation. Modules are suitable for standardized male crimp contacts P sizes 22-20-16-12, 26 to 12 AWG corresponding to cable sections from 0.15 to 3.18 mm2 .

FEATURES AND BENEFITS

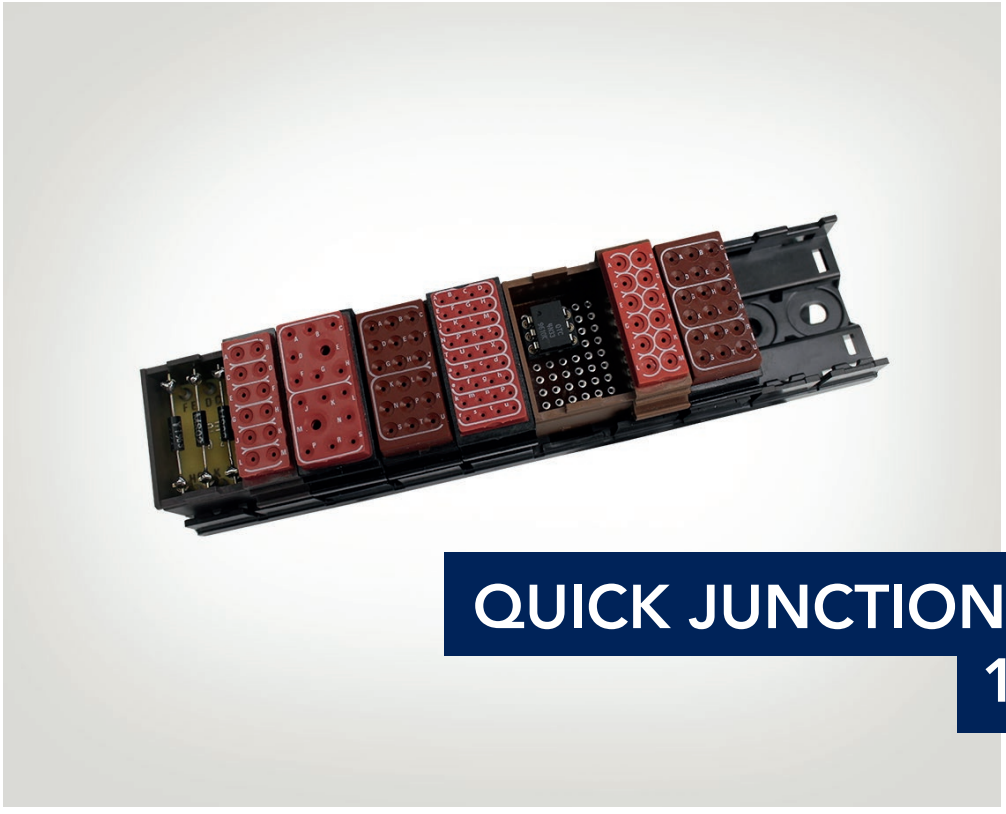
- Modules comply with NF/UTE C 93-462, NSA 937901 and EN 3708 standards
- Crimp male contacts P comply with NF L 53-105, NAS 1749 and EN 3155-016 standards. Maybe inserted or extracted with standard tools.
- Two types of metal rails cut to measure.
- Large range of wiring diagrams.
- Grounding modules with incorporated diodes, mixed modules and modules to be soldered on PCB.
- Feedthrough modules and rails.
- Power junction blocks with stud terminals Ø5 or Ø8.
- Junction blocks for fuses and diodes.
  - Modules mounted individually

DESCRIPTION

Distribution Modules Type 1750 provides wiring high density modular connections, very high performance, easy and fast installation. They may be inserted and extracted without special tools, in part, or all along the dissymmetrical metallic rail with spring or a composite rail which locks each module in place. Modules may be changed at any time without removing adjacent modules. All modules have the same pitch of 0.551 inches. They are suited for standard crimp contacts sizes 22-20-16-12 and 10 for 26 to 8 AWG which correspond to cable cross sections from 0.15 to 8.98 mm2.

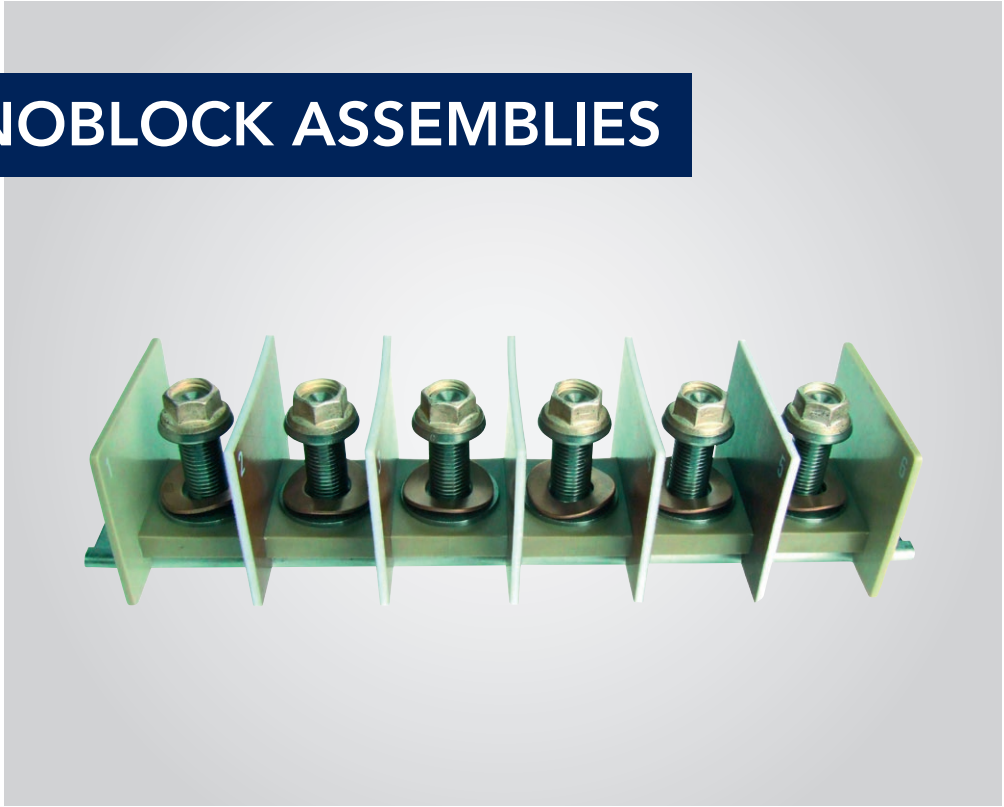
FEATURES AND BENEFITS

- NF/UTE C93-462 STANDARD
- Very high density contact points, wired with standard tools.
- Crimp contacts P sizes 22-20-16-12 and 10 - from 26 to 8 AWG. NF L53-105; EN 3155-016 standards
- Quick maintenance: Modules assembled and disassembled, either in sections or on the whole length of the rail, without special tools.
- Sealing of modules is ensured by a patented overmolded grommet
- Points of contacts are identified alphabetically on the hermetic sealed grommet.
- Contact layouts are indicated with a white line symbolizing electrical circuits.
- Broad range of interconnection layouts available in all sizes.
- Grounding module on metallic rail
- Metallic or Composite rails (with 60% weight saving)
- Amphenol modules type 1750 can be assembled on the same rail with feedback modules, mixed modules, with inserted diodes, component carrier module, grounding modules and terminal junction blocks (BJT).
- Mixed sizes and layouts are available
- Each module has a reference tag holder for easier identification.



QUICK JUNCTION MODULES: 1750 SERIES

1300 MONOBLOCK ASSEMBLIES



DESCRIPTION

The one piece type 1300 assemblies have been created by Amphenol to meet the very stringent requirements of «CONCORDE» supersonic aircraft. They have been used on «AIRBUS» family.

- These assemblies are made of Terminal Junction Blocks (TJB), using self-locking nuts.
- Withstanding temperature range of -60°C to +230 °C (permanent).
- The TJB are crimped on a metallic mounting rail. Studs and nuts are made of stainless steel (so are the accessories).

A protecting cover equipped with retained screws is assembled by mean of column screws used also for mounting on structure. Screws and cover are always ordered separately.
Identification of each TJB is made by marking of circuit separator.

DESCRIPTION

Backshells are qualified to AS85049 and provide strain relief, environmental sealing and EMI/RFI shielding. Also RoHS compliant, they are available in aluminum, stainless steel, brass, and composite—and come in various finishes. Different designs (i.e. straight, 45, and 90) are available and customization is always an option.

Straight backshells are available in different lengths and cable entry diameters for most applications. Different cable and braid terminating systems are also available.

Many applications require the cable to be bent and routed rather than straight routing. Space saving and convenience are two important features in this case. Amphenol offers a 90° bent style for this requirement.

In addition, Amphenol offers another option in which the cable needs to be routed in 45° to the axis of the assembly – increasing the design flexibility.

Coupling options include:

Spin Coupling
The coupling nut is captivated in the backshell follower through a suitable retention mechanism. This style facilitates the free rotation of the coupling nut and hence the assembly of backshell to the connector becomes easy without turning the entire backshell body. Lock wire holes are provided on the coupling nut to prevent accidental de-coupling when specified.

Self-Lock Coupling
In the self-lock style, the free movement of the coupling nut is arrested through a suitable device so that the accidental de-coupling is prevented within the specified vibration levels.

Direct coupling
In the direct coupling design, the coupling nut is eliminated. The coupling end of the backshell is designed for the direct fitment to the connector. This style finds applications when simple direct connectivity is sufficient.

Finally, many accessories are available as well for the backshell product line: band lock, shrink boot, lamp thread, & crimp ring adapters; dust caps; strain relief clamps, flanges, and more…

BACKSHELLS

P-CLAMPS & OMEGA CLAMPS

DESCRIPTION

Engineered for lean manufacturing, the high performance Omega Clamps were developed to replace and outperform traditional P-Clamps and Saddle Clamps. Featuring an overmold silicone cushion with PEEK polymer, our clamps are completely non-conductive/ non-corrosive, lightweight, and very durable.

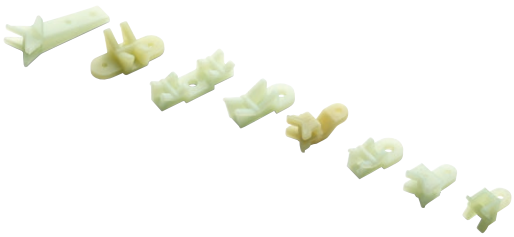
They are made of Glass-Reinforced Plastic (Polyetheretherketone per MIL-P-46183) & Silicone Rubber per ASTM-D-2000. They have an Operating Temperature between: -65°F to 350°F (-54°C to +107°C) & meet Flammability rating: UL94, VO; FAR25.853.

FEATURES AND BENEFITS

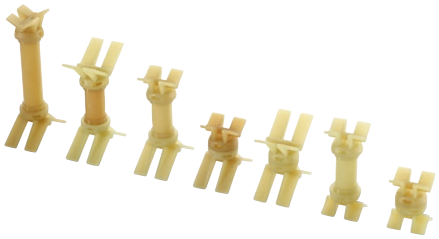
- Overmold technology: Cushion will not come off or slide off
- High temperature resistance; Chemical resistance
- Completely Non-Corrosive and Non-Conductive
- Withstands constant vibrations and shock loads
- Available in multiple size

ADDITIONAL CABLE ATTACHMENTS

- 3261 according to NSA935504



- 3308 according to ABS1144



DESCRIPTION

The LDG P-Clamps are the result of more than 30 years of continuous Amphenol development of Overmold Technology -- an engineering / manufacturing process that is a major strength of the company. Through the perfection of this technology, engineering is able to use a softer rubber for clamp cushioning, thereby reducing wear and tear on mission critical cable harnesses – all without compromising the strength and performance of the clamp itself. Specifically designed for high performance aerospace cables, such as the MT/MTL product lines, the LDG P-Clamps are easy to use, simple to maintain, and are available in 17 different sizes.

- They are made of Glass-Reinforced Plastic (Polyetheretherketone per MIL-P-46183) & Silicone Rubber, 20 durometer Shore A. They have an operating temperature between: -65°F to 350°F (-54°C to +107°C) & meet flammability rating: UL94, VO; FAR25.853.

FEATURES AND BENEFITS

- Overmold technology: Cushion will not come off or slide off
- High temperature resistance; Chemical resistance
- Completely Non-Corrosive & Non-Conductive
- Withstands constant vibration and shock loads
- Available in 17 different sizes

LDG P-CLAMPS

ABS2195 CLAMPS
(COMMERCIAL EQUIVALENT, CC5516)

DESCRIPTION

ABS2195 Clamps (Commercial equivalent, CC5516) is a line of lightweight Cable Clamps, in composite and silicone, derived from the legacy NSA5516 metallic clamps. They are designed to keep cable harnesses or hydraulic pipes securely maintained on the structure. They are closed and fixed on the structure by a screw (not supplied), in one operation. CC5516 clamps absorb shock and vibrations, and offer an unequalled protection of bundles and pipes against pinching, crushing or mechanical wear. They are suited for applications in harsh environments and temperatures up to 225°C. They are available in 37 sizes, for bundles or pipes diameters from 3 to 60 mm.

FEATURES AND BENEFITS

- 35% lighter than Aluminum clamps
- 65% lighter than Stainless Steel clamps
- 37 sizes available
- Installation time saved
- Stackable options – currently in process
- Standards & Qualifications: RTCA DO 160G (products); ABS 1916 (tests)
- Environmental, Operating Temperature: -55° to +225°C permanent
- Flammability/Smoke/Toxicity: ABD 0031 FAR 25.853
- Fluids Resistance, Spray tests: Fuels, Hydraulic fluids, Lubrication Oils, Solvent and Cleaning fluids, De-icing fluids, insecticides

DESCRIPTION

Amphenol's ABS1339L Clamps (Commercial equivalent, C-Clamps – CC1339L) provide routing, support and fixing for cable harnesses of various diameters. They are used in the wing sections of aircrafts, in the fuselage for power and electrical cables, as well as inside the cabin for in-flight entertainment or cabin service systems. Different materials and configurations are available depending on the temperature and routing of the conduits (including versions for use inside the fuel tank).

FEATURES AND BENEFITS

- 8 different sizes
- Diameter range: 0.2 – 1.88"
- Lightweight: 2.1g – 14.6g
- Materials: Plastic: Black Polyamide
  Elastomer protection: Brown Silicon or Blue Fluorosilicone
- Temperature Limits: Operating temperature: -65°F to 350°F (-54°C to +107°C)
- Flammability: Conforms to ABD031 standard
- Fluid Resistance: Brown version: NATO F44, AS 1241, MIL PRF 680 (type 1), 5606,7870, 23699, 87937 (diluted), 87252 and AMS1428
  Blue version: Resistant in complete immersion during 96h

ABS1339L CLAMPS (COMMERCIAL EQUIVALENT, C-CLAMPS – CC1339L)

JIG BOARD CLAMPS

DESCRIPTION

Designed for pre-installation wire harness assembly, Amphenol's Jig Board Clamps have a proven track record of high performance. Made of Acetal, the durable clamps maintain their original shape after continued use, yet the smooth design of their edges diminish wear and tear as the harnesses are being assembled. Developed in multiple sizes, our Jig Board clamps can accommodate a wide range of cable diameters. The one-piece design enables efficient inventory management, while making harness assembly simple and convenient – saving both time and money.

There are eight part numbers available, ranging from 0.5" to 2.0" in diameter. Custom product is available.

FEATURES AND BENEFITS

- Designed with Acetal for strength and durability
- Various sizes to accommodates a wide range of wire diameters
- One-Piece design makes it simple and easy to use
- Smooth edges limits wire chaffing and reduces wear and tear
- No elastic band or straps required – minimizes installation time

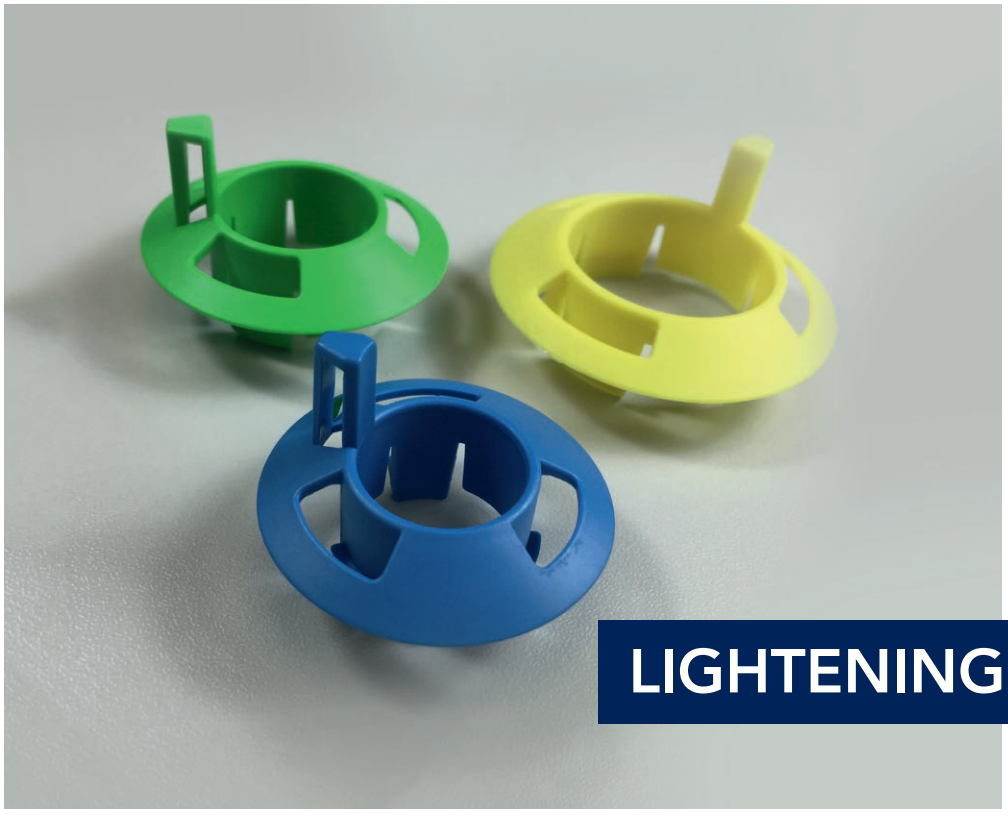
DESCRIPTION

Amphenol's QuickSNAP Lightening Bushings are made to help guide wired bundles through the aircraft's frame and stringers. Unlike traditional lightening bushings, our products significantly reduce installation times and reduce the amount of foreign object debris (FOD). The lightweight QuickSNAP's are made with smooth edges in order to reduce wire chaffing, and although they are available in various standard configurations and sizes, customization is always an option.

They are made of Nylon per ASTM-D-4066 PA0121 and have an Operating Temperature range of -67°F to 302°F (-55°C to 150°C). They meet Flammability rating: FAR25.853.

FEATURES AND BENEFITS

- Snap-In design makes it quick and easy to install—no tools are required
- No glue or other hardware is necessary— reduces FOD
- Made of lightweight material
- Smooth edges reduces wire chaffing
- Offered in two different designs: one piece or two pieces
- Custom variations are available upon request



LIGHTENING BUSHINGS

FAIRLEAD BLOCKS

DESCRIPTION

Designed to ensure that pipes and tubes are properly secured throughout their entire length, Amphenol's Fairlead Blocks were designed with strength and stability in mind. They provide stability against surges and vibration, and they're developed with material that prevents chaffing. Amphenol's engineering experience enables the company to develop blocks that accommodate a wide range of tube diameters, and the products have no loose parts—reducing the likelihood of FOD.

An Aluminum Alloy (6061-T6 or 2024-T3) is available for light duty applications, and Stainless Steel per ASTMA109 is available for higher performance applications. Also available is Carbon Fiber Composite.

FEATURES AND BENEFITS

- High Performance Materials are strong, durable, & lightweight
- Multiple diameter options can meet a wide range of tube diameters
- Multiple material options provide many choices per specific requirement
- No loose parts reduces the likelihood of FOD & minimizes maintenance costs

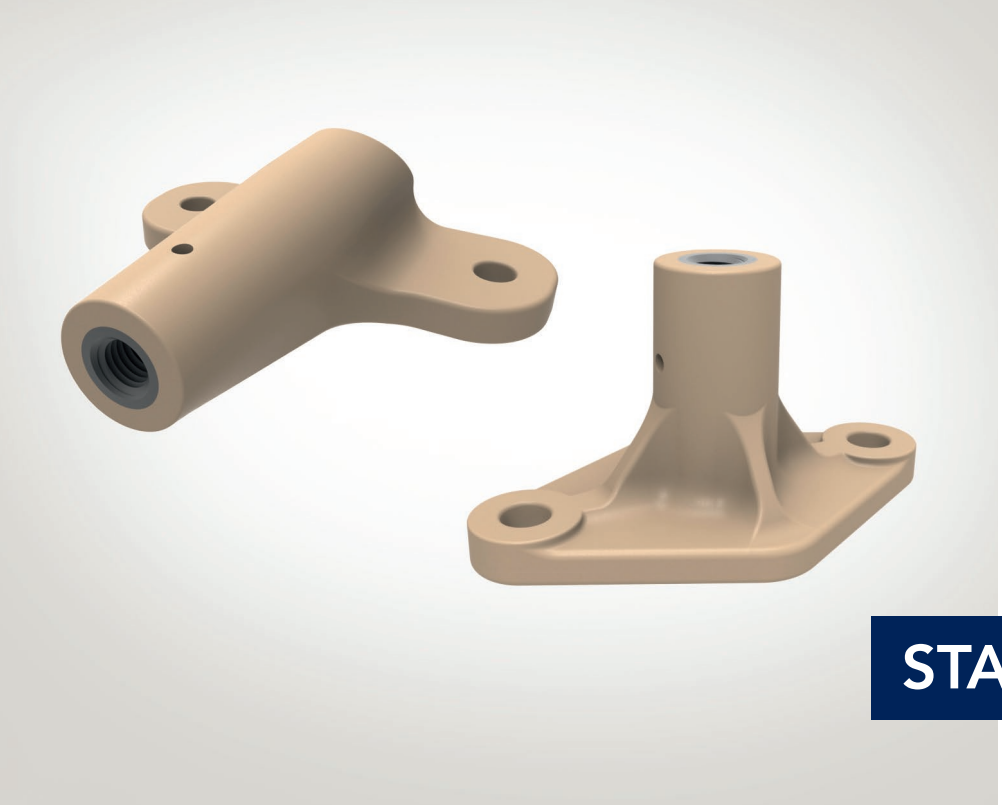
DESCRIPTION

Designed to help guide wire bundles through aircraft, Amphenol's high performance Standoffs were designed with strength, stability, and weight reduction in mind. Our Standoffs are made with PEEK— a very strong, non-conductive/non-corrosive, and lightweight material – designed to replace heavier aluminum. They come with a locking feature for security, are designed with ribs to provide additional strength, and support a wide range of clamp sizes and raceways for added convenience.

Standoffs are made of Glass-Reinforced PEEK Per MIL-P-46183 with a metallic threaded insert. They meet an operating temperature range between -67°F to +266°F (-55°C to +130°C) and meet flammability rating: UL94, VO; FAR25.853.

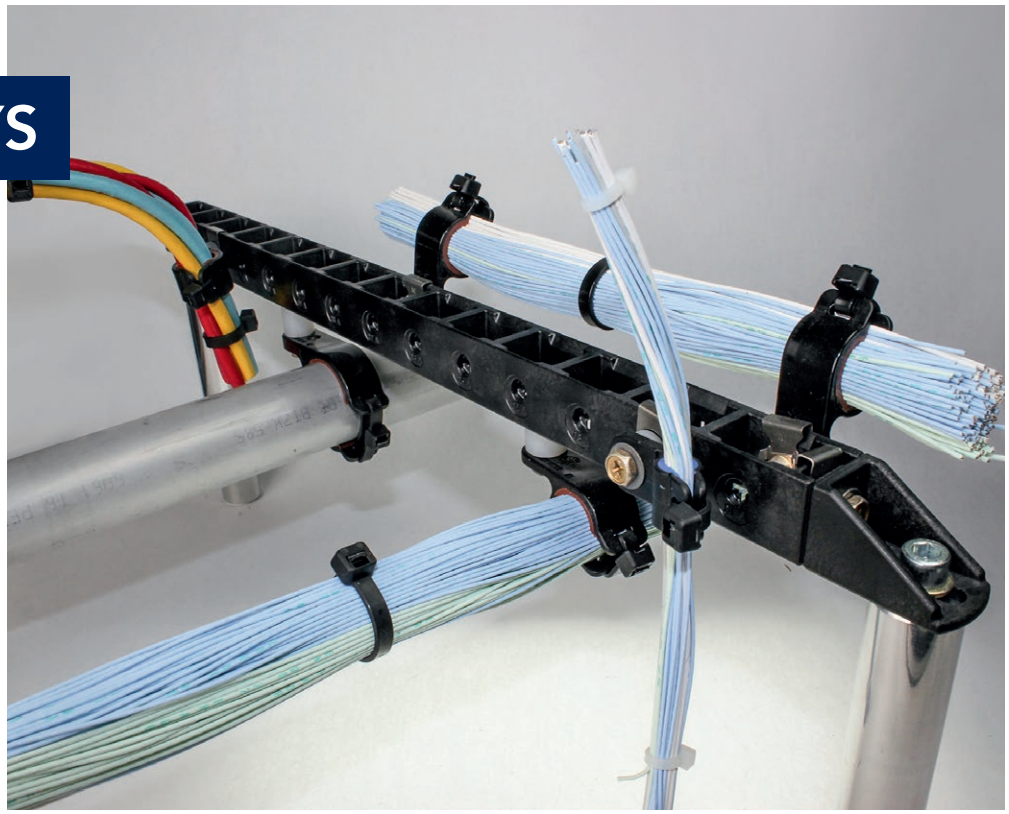
FEATURES AND BENEFITS

- Non-conductive & non-corrosive
- PEEK polymer: Strong, Durable, and Reliable
- High temperature resistant
- Lightweight



STANDOFFS

RACEWAYS



DESCRIPTION

This accessory is a bar of various lengths which allows the user to fix Cable Clamps ABS1339 on up to three sides. The adapter on each end of the bar allows the user to select the desired position for the panel mounting 0°, 90°, 180°, 270°.

They are made of Black thermoplastic and have an Operating Temperature range between -67°F to +185°F (-55°C to +85°C). In addition, the products meet fluid resistance: NATO F44, AS 1241, Mil PRF 680 (type 1), 5606, 7870, 23699, 87937 (diluted), 87252 and ASM 1428. Their flammability rating conforms to standard ABD031.

FEATURES AND BENEFITS

- Multiple fixing points: Offer convenience and ease of use
- One-piece design: Simplifies and inventory management
- Variety of sizes
- Lightweight and durable

DESCRIPTION

These clamp blocks on axis alignment are qualified to ABS14XX for pipes diameter .25 to 2 in. Each assembly is made from two symmetrical monoblock half clamps molded in a black thermoplastic material and overmolded for the silicone part. They can be mounted using a .1900 32 UNF-3A screw (to be ordered separately).

FEATURES AND BENEFITS

- Temperature: Normal operating: -55° to +170° C
- Raw Materials
  - Body: black thermoplastic
  - Half-sleeve: bright brown thermoplastic
  - Silicon: brown for normal zone
  - Blue for fuel zone
  - Captive washer: stainless steel
  - Pre-handling system: black thermoplastic
  - Internal diameter of captive washer (for .1900-32 screw): .197 inch

THERMOPLASTIC CLAMP BLOCKS (ABS SERIES)

HARNESS & HAT SUPPORTS

DESCRIPTION

Designed to secure and guide wire bundles throughout an aircraft, Amphenol's Harness and Hat Supports were designed for lean manufacturing and durability. Built in a one-piece, lightweight design with multiple fixing points, the high performance products are strong, durable and make wire bundle installation and maintenance easy. They are able to support large bundles and high stress requirements.

They are made of Nylon per ASTM-D-4066 PA0121 and have a temperature range: Long-term exposure: 167°F (75°C); Short-term exposure: 248°F (120°C). They meet flammability rating, FAR 25.853.

FEATURES AND BENEFITS

- Multiple fixing points: Offer convenience and ease of use
- One-Piece design: simplifies installation and inventory management
- Variety of sizes: accommodates different cable routing requirements
- Lightweight and Durable: simplifies wire bundle installation & maintenance

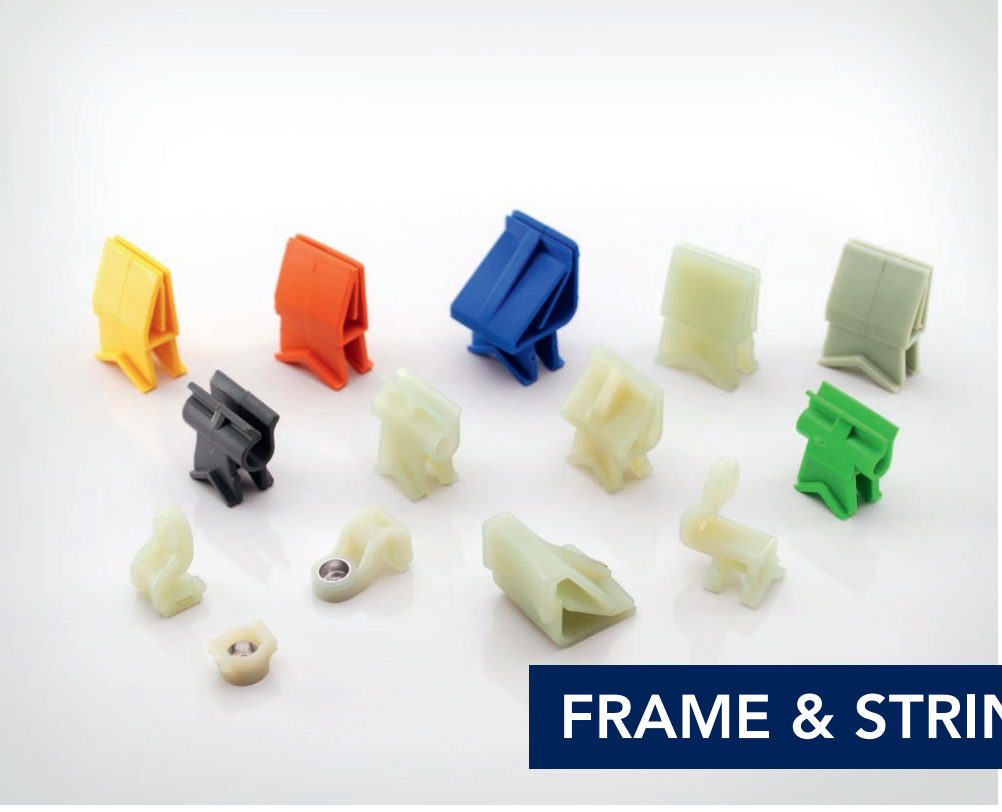
DESCRIPTION

Amphenol's Frame and Stringer Clips help attach various wire bundles and cables to the aircraft's structure. They are offered in multiple materials and are designed for use in airframe, fuel tank, and engine applications. Available in various standard configurations and sizes, Amphenol also provides customized products to help meet specific customer requirements.

They have an Operating Temperature range between -67°F to 275°F (-55°C to +135°C) and meet Fluid Resistance: ASTM D 543, MIL-T-81533, TT-T-266, TT-M-261, ASTM D 1635, MIL-T-5624, MIL-T-83133.

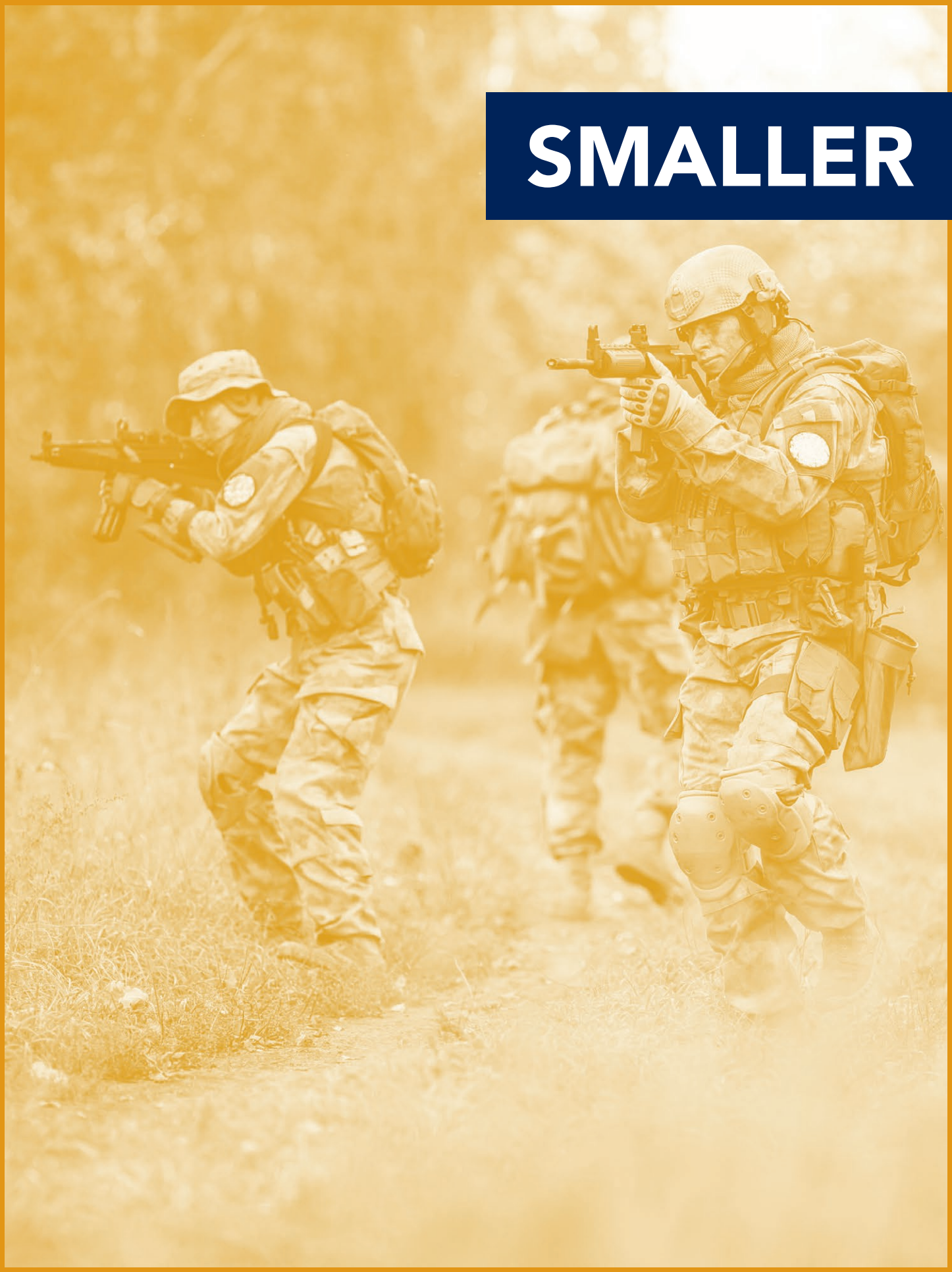
FEATURES AND BENEFITS

- Different types (L-Frame/P-Frame, S-Frame, and Anchor Support) & different material (Nylon 6/6 (PA), Ultem (PEI), PEEK)
- FAR25-853 compliance – meets high temperature requirements
- Multiple colors helps identify different sizes
- No loose parts reduces the likelihood of FOD & minimizes maintenance costs



FRAME & STRINGER CLIPS

SMALLER



DESCRIPTION

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 customers 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 mechanisim along with an internal EMI spring to provide excellent shell to shell conductivity. Various mounting options are available including in-line and 2-hole flange mount configurations.

FEATURES AND BENEFITS

- 2.5 milliohm shell-to-shell conductivity
- 500 mating cycles
- Tape and Reel contacts for automated cable termination
- Excellent D-Sub alternative for aerospace applications
- Low Cost as compared to traditional mil-spec offerings
- 7 & 15 pin versions available today
- In-Line and 2Hole Flange Mount shell options
- PC Tail, Machined Crimp Barrel contacts are available

BANTAM

2M MICRO 38999

DESCRIPTION

The 2M Micro38999 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 online.

2M FEATURES

- 70% weight savings compared to MIL-DTL-38999
- 50% smaller than MIL-DTL-38999
- Broad family with many styles and options
- Designed for high-reliability aerospace defense/C4I applications
- For use in the harshest environments

PRODUCT SERIES

2M801 Dual-Start Connectors: Full mating in 1 ½ turns. Plug option for anti-decoupling mechanism.

2M803 Bayonet Coupling: ¼-turn full mate bayonet coupling.

2M804 Push-Pull Quick-Disconnect: Push-to-mate, pull-to-unmate connector with EMI spring installed in the receptacle for improved EMI.

2M805 Tri-Start Threaded Coupling: Offers the best EMI and vibration performance among the 2M connector family. Utilizes Tri-Start thread with 1-turn full mate coupling. EMI ground strap and shell-to-shell bottoming provide superior EMI shielding.

2M Family Accessories: Amphenol offers a complete collection of backshells, protective caps, and other accessories for all of our 2M connectors.

2M High Speed Connectors: Contact an Amphenol representative for more information.

2M Cable Assemblies & Overmolds: Contact an Amphenol representative for more information.

DESCRIPTION

Pegasus Series are twist & lock, “scoop-proof” connectors which provide the same convenience and weight savings of the Luminus Series, with the added benefit of EMI shielding and protection from ambient noise transients.

EMI shielding is provided by an electroless copper and nickel plate, and a copper alloy spring finger gasket. Tests show greater than 50db of attenuation for low end signals (<100Mhz) and greater than 40db of attenuation for high end signals (<1Ghz). This level of isolation makes Pegasus Series the ideal choice for AC wash lighting, fluorescent lighting, switching power supply systems, and inter-system connectivity signal paths, where protection against ambient noise is required.

FEATURES AND BENEFITS

- Electroless Copper & Nickel plating
- 1/4 turn bayonet style connection
- Interfacial & Triple-Barrier Seal
- Multiple sizes & accessories
- Scoop-Proof

PEGASUS SERIES (& PEGASUS WITH COAX)

LUMINUS SERIES

DESCRIPTION

The Luminus Series are lightweight, cost-effective connectors that are highly reliable and simple to use. With multiple configurations and arrangements available, a solution can be tailored to suite your application's exact requirements. Proven solutions can be found in single engine general aviation, multiple-engine business and passenger jets, and high performance rotary aircraft. Ideal where space is limited, these innovative, "scoop-proof" connectors feature a locking mechanism that ensures stability, are suitable for blind-mating, and are RoHS compliant.

FEATURES AND BENEFITS

- 1/4 turn bayonet style connection
- Interfacial & Triple-Barrier Seal
- Multiple keying positions; Visual markings
- Multiple configurations & accessories
- Rugged Polyamide Housings; 500 mating cycles
- Blind-Mate connection
- D160, MIL-T-81714, FAR25 Compliance

DESCRIPTION

Intended for harsh environmental applications and used extensively in soldier communications, 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-luster and corrosion resistant.

Featuring an optional locking mechanism, multiple shell sizes with up to 37 contacts and suitability for overmolding, Terrapin is the preferred choice for miniature connectors in military and other harsh environment applications.

FEATURES AND BENEFITS

- Miniature footprint: Space saving compared to traditional interconnect
- Quick release breakaway
- Latched version: Allowing connectors to be locked together
- Common plug connector: Suitable for mating with both push-pull and latch style receptacles
- Sealed to IP68: A high degree of sealing to protect against dust and water ingress in both mated and unmated conditions
- RoHS compliant: Meets the industry requirements to restrict the use of hazardous substances
- 2000 + mating cycles
- Multiple keying options: Five keying options to prevent mis-mating
- Gigabit Ethernet and USB 2.0 compatible
- Suitable for computers, LAN switches and routers
- Suitable for overmolding

TERRAPIN

TAC CONNECTORS: M55116-TYPE CONNECTORS

DESCRIPTION

New military and commercial applications are demanding a reduction in connector size and weight without a loss of performance. Amphenol has met that demand with its new Miniature M55116-Type TAC Connectors for soldier-worn applications, radio systems, and ruggedized communications systems.

TAC Connectors are designed and manufactured to the exacting specifications of MIL-DTL-55116 requirements at half the size of the standard connectors.

Amphenol TAC Connectors are the ideal choice to reduce size and weight and still maintain many of the same performance benefits wherever a M55116 connector is needed on a newly designed system.

FEATURES AND BENEFITS

- Smaller Size
- Lighter Weight
- 10 Contacts
- Meets or Exceeds M55116 Specifications
- Available as Overmold, In-Line, or Panel Mount

DESCRIPTION

Amphenol reduces the pitch and increases the density of contacts with the brand new HDAS range. With its robust and simple design, high density and high performance to extreme conditions, HDAS is the right connector when installation, cost and reliability must be considered.

100% Optimized

- Lateral rails protecting male pins from external damages
- LCP material allowing all types of soldering processes
- Guiding/keying devices can be polarized in 6 positions within their own cavities: 36 keying possibilities per connector

100% Performing

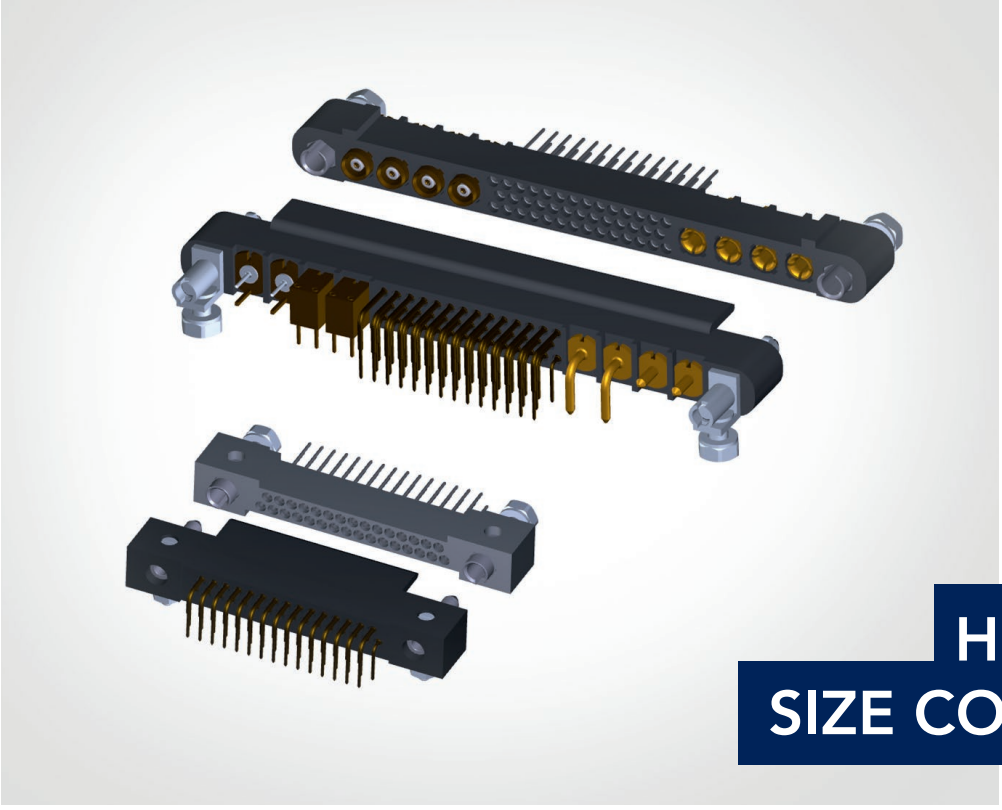
- STARCLIP socket technology by Amphenol 6 tines for better reliability
- HDAS has surpassed all MIL-DTL-55302 requirements
- Dedicated to high temperature and vibration levels

HDAS Range Extension:

- So far, HDAS is available with: 7 sizes available from 3 to 6 rows, starting from 50 to 253 contacts
- Under development:
  - 2 rows: 11, 21, 31, 41 contacts
  - 3 rows: 11, 20, 29, 41 contacts
- Terminations available:
  - Straight PC tail
  - Press fit
  - Male with right angle PC tails
  - Solder cup contacts
  - SMT under analysis
- Mixing power contacts and coaxial contacts under analysis
- Staggered grid pattern: 1,905[.075] spacing along the row, 1,905[.75] between rows, 0,9525[.0375] offset

Technical features:

- 4,5A current rating per contacts
- 750V DWV
- 65/+150°
- 1,2mm[.0472] backoff / electrical security
- M55302 qualification + A400M & RAFALE vibrations / shocks



HDAS SMALL SIZE CONNECTORS

MICRO-D CONNECTORS

DESCRIPTION

Amphenol's Micro-D Connectors provide small interconnect solutions which will exceed the requirements of the US military standard M83513. What differentiates Amphenol from our competition is our ability to evolve and innovate. We design and build new Micro-D solutions beyond the choices offered in our current online catalog. Amphenol is not limited to the traditional M83513 rectangular connectors and continues to offer new variations to support key programs and markets in the defense and aerospace industries.

Amphenol has designed a range of specialty connectors to meet your specific requirements. Our connectors are designed to be compact, robust, and multifunctional.

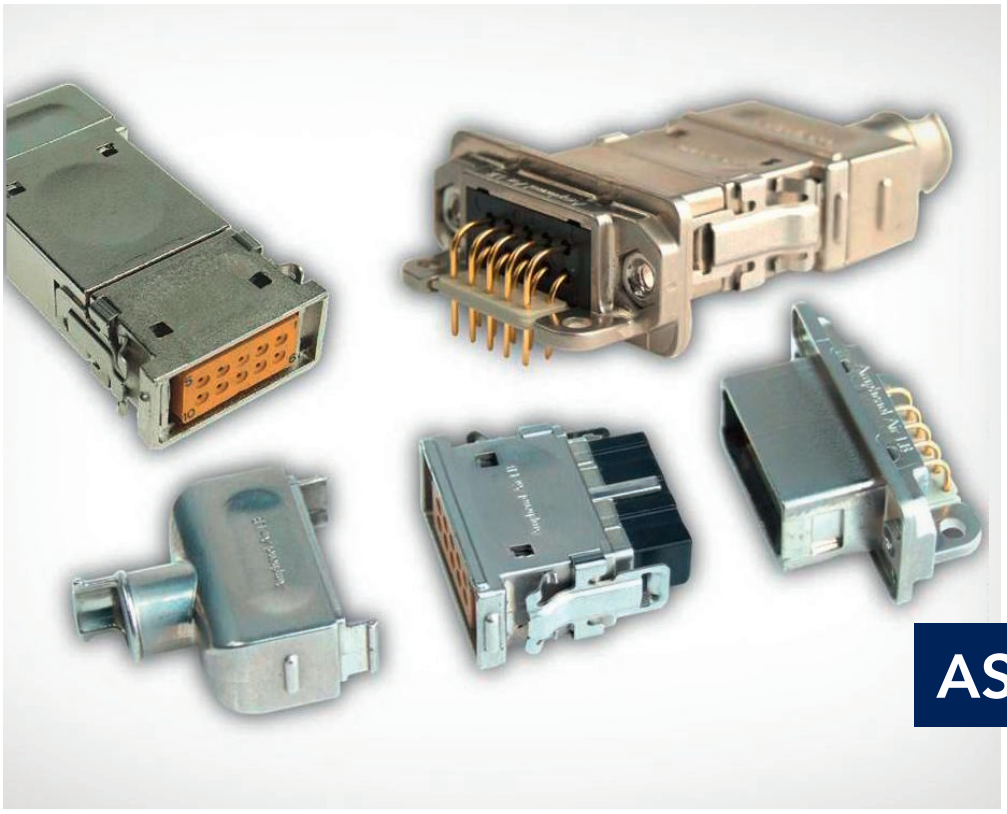
- Surface Mount/Straddle Mount
- Combo/Hybrid Micro-D
- Panel Mount w/o Ring Seal
- High Temperature Micro-D (200 °C)
- Right-Angle PC Tail
- Double or Multiple-Bay Connectors (vertical/horizontal orientation)
- Custom Cable-Harnesses Assemblies
- Many other Custom Connectors

DESCRIPTION

The ASR Connector is a small form factor "all-in-one" rectangular connector. Each connector is supplied with its locking mechanism, interfacial and/or grommet seal. Receptacles come with threaded inserts, contact retainers for easy install as board level in/out. It's D-shaped & fitted with a quick lock mechanism for easy install.

FEATURES AND BENEFITS

- All-in-one design & locking tabs allows for easy "mate & lock"
- Interfacial & rear grommet sealing to Mil-Spec Standards
- Also available with coax contacts.
- High-performing SAE 39029 Series crimp contacts are standard
- D-Shaped Design: Enables simple polarization



ASR SERIES

R-SATA CONNECTORS

DESCRIPTION

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.

FEATURES AND 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

Four body styles for 7 pin & Combo 22 pin arrangements:

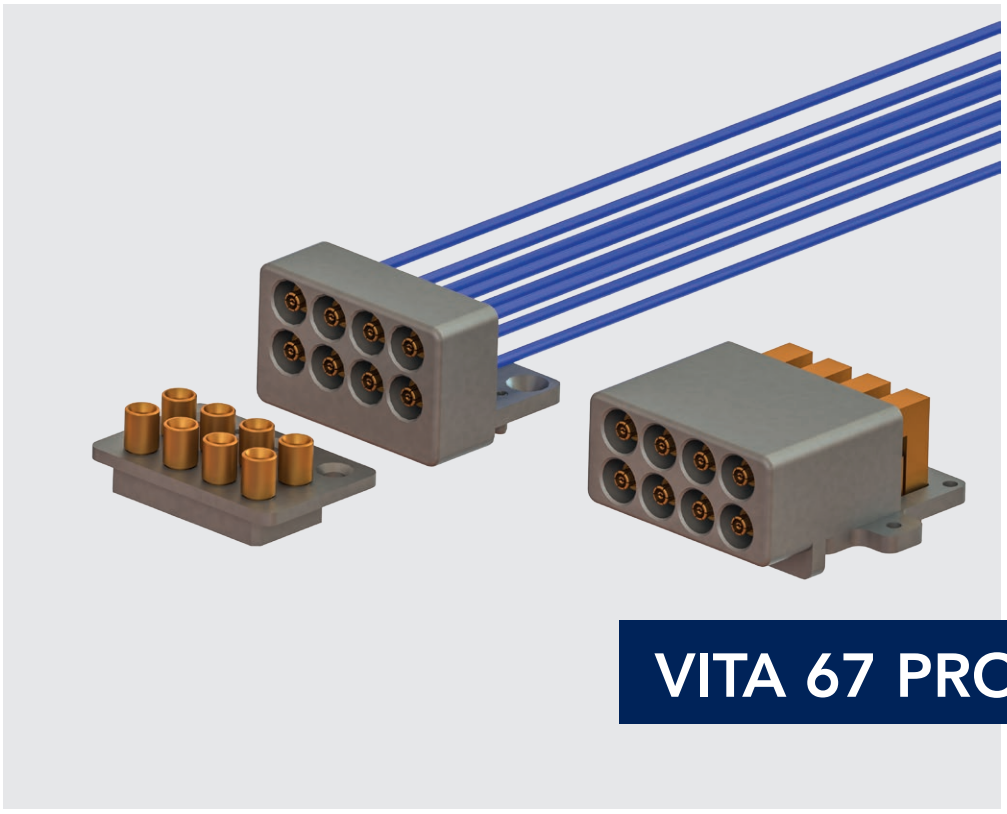
- Right Angle Plug (Daughterboard)
- Straight Receptacle (Motherboard)
- Right Angle Receptacle (PC)
- Straight Plug – Parallel Boards

DESCRIPTION

Amphenol's latest high density, high performance VITA 67 offering utilizes floating SMPM coaxial contacts to ensure excellent RF performance in any mating condition. These parts are also designed for side-by-side implementation with VITA 46 hardware and can be cabled to Ø.086 and smaller coaxial cable types.

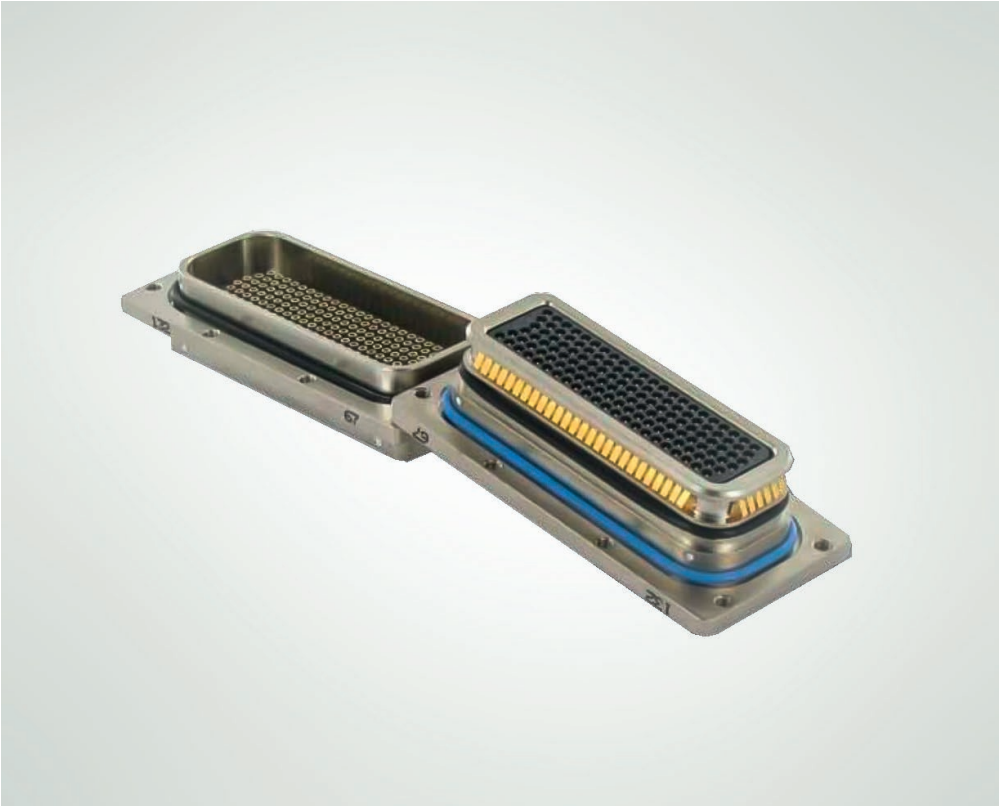
FEATURES AND BENEFITS

- The foundational coaxial interconnect for RF on VPX platforms
- Floating SMPM coaxial contacts ensure excellent RF performance in any mating condition
- Designed for side-by-side implementation with VITA 46 hardware
- COTS versions available for 67.1 & 67.2
- High-reliability, high-density for aerospace & defense applications
- Robust and rugged high speed cabled solution



VITA 67 PRODUCT LINE

SMASH



DESCRIPTION

The SMASH connector offers extremely high robustness where signal integrity is required. Based on an aluminum shell with 1, 2 or 3 bays, the SMASH connector can house up to 450 contacts, with up to 150 contacts per bay. The chevron grid pattern (1.905 x 1.905 [.075 x .075]) provides high contact density for advanced electronics packaging. The metallic shell is equipped with grounding, guide pins, and keying devices to ensure mechanical reliability.

The modularity

Within the standard SEM E form factor, the SMASH connector provides a wide array of signal transmission combinations. Various inserts can be housed within the robust, modular shell while meeting the standard board and chassis formats.

A connector that is adaptable to all types of mounting and soldering processes

The sculptured flex circuit termination of the daughter card connector can accept the thickest boards. No tooling is required as the design provides good alignment to the solder pads of the daughter card.

A connector dedicated to harsh environment

The Starclip technology of the socket contact (with a 6 tine clip) offers high mechanical and electrical reliability, combined with low insertion force. The SMASH connector is ruggedized to meet extreme conditions, such as salt spray, vibration, and contact resistance.

Flexibility

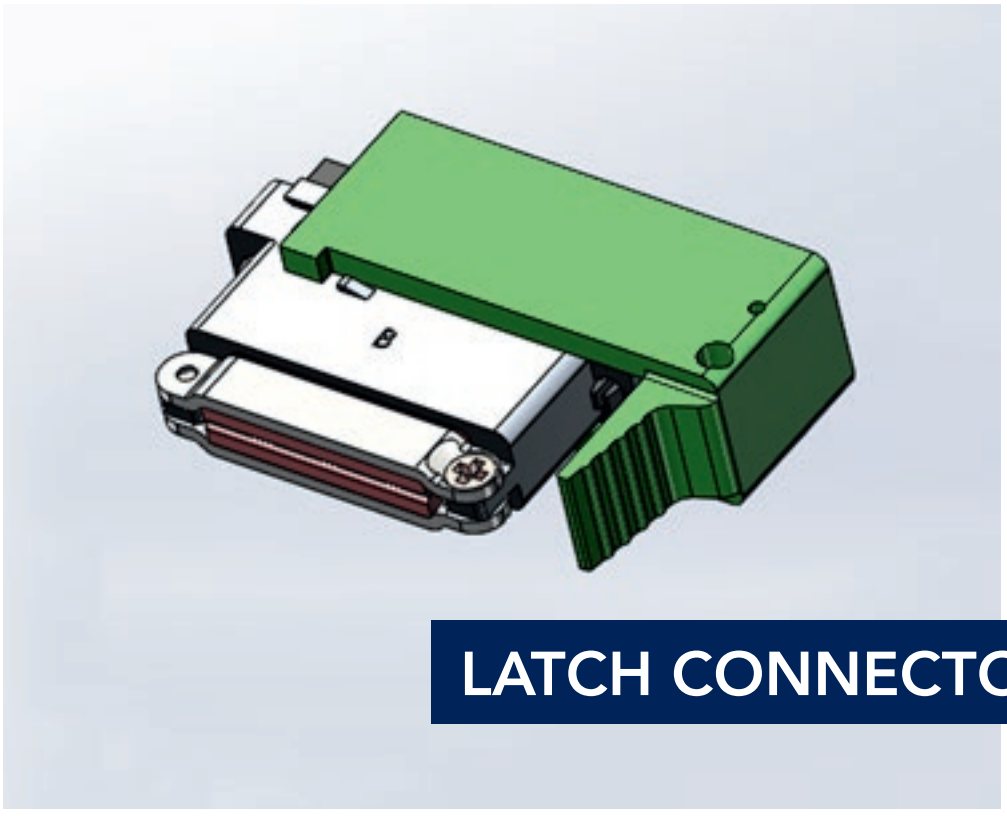
From 1 to 3 bays with 150 or 132 signal contacts per bay, the SMASH connector is available in either chevron grid or staggered grid patterns. It can provide RF, power, and fiber optic solutions with hybrid arrangements. LVDS signals are also available.

DESCRIPTION:

Rectangular connectors that meet customer needs for fast latching, tool less interconnects on various connector platforms.

FEATURES AND BENEFITS

- Sealed to meet today's altitude immersion requirements
- Removable contacts
- Programmable keying to prevent mis-mating
- Small package size – flangeless option available
- Quick disconnect, visble latching



LATCH CONNECTORS: MICRO

ABS2216 BACKSHELLS

DESCRIPTION

Composite backshell compatible with MIL-DTL-38999 series III and EN3645 connectors.

FEATURES AND BENEFITS

- Anti-decoupling system
- 3 angles: straight, 45° and 90°
- EMI and NON-EMI versions available
- Handling temperature from -65° to +200°
- Light weight solution
- EMI backshell provided with a band-it to better maintain EMI sleeve

FASTER

DESCRIPTION

Amphenol produces the ARINC 801 cylindrical fiber optic connector suite for aerospace and military applications. Based on the commercial ARINC 801 specification, this series features a removable alignment, sleeve retainer (ASR) for ease of termini end face cleaning, guide pins for precision alignment, and a scoop proof shell design. It is available in standard D38999 plug and wall mount shells. Inserts are available to support 2 to 32 channels and can support both PC and APC.

Amphenol also offers the companion ARINC 801 terminus, which uses a standard 1.25mm ferrule and sleeve that can be terminated with standard LC termination procedures. The terminus can be inserted or removed from the connector with a standard size 16 contact removal tool. The terminus is available in both multimode and single mode versions.

The fiber optic contact provides low insertion loss (0.3dB max, multimode) and back reflection (-55dB, APC). In addition to the standard PC end face option, Amphenol's ARINC 801 termini are offered with an APC end face for applications requiring reduced back reflection.

FEATURES AND BENEFITS

- Qualified to the ARINC 801 Specification
- Precision alignment and components provide excellent optical performance
- Supports APC termini for RF-over-Fiber and other applications requiring low back reflection
- Supports standard suite of 38999 backshells and accessories
- Removable ASR facilitates termini cleaning
- Scoop-proof design prevents termini end face from being touched by the front of the mating connector
- High-density arrangements up to 32-channels

FS801: ARINC801 QUALIFIED CIRCULAR FIBER OPTIC CONNECTORS

USB FIELD: USB 3.0

DESCRIPTION

With USB Field, you can insert a standard USB 3.0 cordset into a metallic plug which will protect it from shocks, dust and fluids. No hazardous on-field cabling and grounding! Also available a version including plug + cordset. This metallic plug is connected into a receptacle, using a Tri Start Thread coupling mechanism (MIL- DTL-38999 series III type) with anti-decoupling device for high vibrations.

FEATURES AND BENEFITS

- Sealed against fluids and dusts (IP68)
- Shock, vibration and traction resistant
- No cabling operation in field and no tools required
- Improved EMI protection
- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) with anti-decoupling device – Shell size 15
- 2 mechanical coding / polarization possibilities (receptacle insert rotation)
- USB3F TV plug retention in the receptacle: 100 N in the axis
- Mating cycles: 500 minimum

ADDITIONAL CONNECTORS

- **RJF-TV:** VG in progress

DESCRIPTION

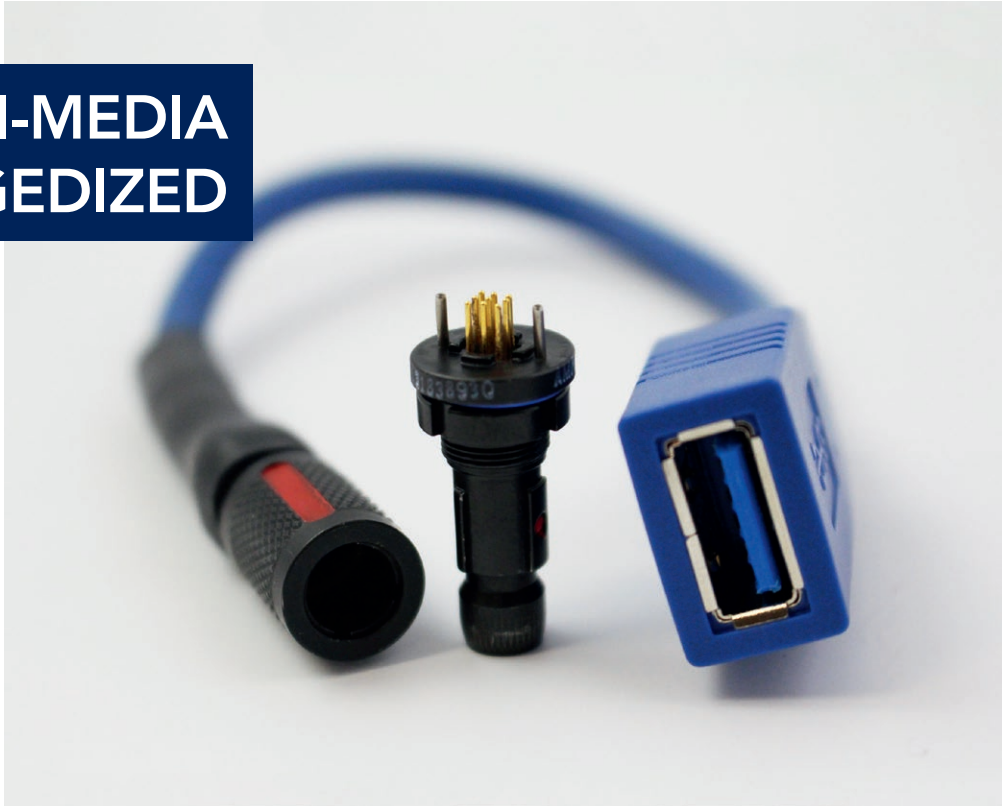
µCom-10Gb+ Series (pronounced, Microcom) is the latest connector offering from Amphenol focused on the latest market trends of the industry: miniaturization and high speed. µCom-10Gb+ design of 4 twisted data pairs insulated throughout the entire connector results in a performance that exceeds IEEE 802.3an-2006 specifications for 10GBASE-T Ethernet and TIA/EIA-568-C.2 Cat6A standards. Designed to be in conformance with MIL-DTL-810F environmental requirements, µCom-10Gb+ 15 mm shell size and 2000 mating cycle coupling provide end users with one of the most rugged and micro sized interconnect solutions on the market.

FEATURES AND BENEFITS

- 500h Salt Spray RoHS compliant plating
- Solder, Crimp and PCB contact styles
- IP68 Sealing for Mated/Unmated Receptacles
- Temperature range: -55°C/ +125°C

µCOM 10GB+

(MRC) MULTI-MEDIA RUGGEDIZED



DESCRIPTION

Specifically Made for all your 10Gb, Gigabit Ethernet, HDMI, USB 2.0/3.0 Needs.

MRC Connectors are capable of running Gigabit Ethernet, USB 2.0/USB 3.0, HDMI and 10 Gigabit Ethernet when specified and designated to a specific configuration. MRC is a micro-miniature connector ideal for Commercial, Industrial and Military Communication Systems.

The MRC flange mounting plugs are supplied with rigid contacts that are flat to the front surface of the connector. This feature allows it to be used in applications such as ruggedized displays, radios, and routers that have potential to come in contact with dirt and sand during use. The MRC can be easily cleaned by simply wiping off debris whereas standard pin and socket style connectors tend to be more difficult to remove debris once it has been compacted in the contacts.

The MRC cable assemblies feature connectors with spring loaded contacts and two coupling styles (Push/Pull and Push w/ ¼ turn lock). Both of these coupling styles mate with the standard flange mounting plug. Cable assemblies are available in various lengths and can either be supplied as double ended with MRC connectors on both ends or with standard COTS RJ45, USB, HDMI connections on one end. Additional cable materials and connector configuration are available.

MRC Series Specifications	
Current Rating	2.5 AMPS Max Per Contact
Protocols Supported	Gigabit Ethernet USB 2.0/3.0, 10 Giga-bit Eternet & HDMI
Durability	2000 Mating Cycles
Unmating Force	4lb min.
Temperature Range	-65° to 100°C (cable rating)

DESCRIPTION

Amphenol offers a MIL-PRF-83526/20A & /21A compliant expanded beam rugged fiber optic connector for military and industrial applications.

Expanded beam technology expands and mates the optical signal through the connector interface path, resulting in a diameter many times that of the original beam. The optical beam is then refocused into the core of the receiving fiber. The larger beam diameter improves insertion loss performance in the presence of dust and debris. Also, because the lenses do not physically contact, there is no wear on the termini, allowing the connector to be mated and demated thousands of times without affecting optical performance.

The Amphenol TACBeam® is hermaphroditic, which facilitates the concatenation of multiple cable assemblies to support varying distance requirements. The connector is available in both single mode and multimode versions, can be configured to support one to four fiber optic channels using a common insert and has been designed to accept a wide variety of cables to suit any application.

FEATURES AND BENEFITS

- Less susceptible to dust and debris
- Monolithic insert facilitates cleaning
- Hermaphroditic design enables daisy-chaining of cable assemblies to support varying distances
- Non-contacting interface allows thousands of mating cycles

APPROVED VG95319/100 AND VG95319/101

ADDITIONAL LENS CONNECTORS AND TERMINIS

- **CTOS:** Small Optical Field Connector

- **CTOL:** Large Optical Field Connector

- **Lumière Contact:** Replacement for ELIO® Contact & Applicable in EN4537 Modules

TACBEAM®: TACTICAL FIBER OPTIC CONNECTOR

TFOCA-II®: TACTICAL FIBER OPTIC CONNECTOR

DESCRIPTION

In 1999, Amphenol designed the "next generation" deployable fiber optic connector for the emerging "knowledge-centric warfare communication" requirements of the future battlefield. With this new product, a tactical, deployable fiber optic connector, the TFOCA-II® family of connectors was born, becoming an enabling technology for the digital battlefield.

The heart of the TFOCA-II® family of deployable fiber optic connectors centers on the TFOCA-II® sealed free-floating termini. The robust termini design enables TFOCA-II® connectors to seal against high humidity and moisture conditions while allowing full axial and orbital movement of the mated termini, providing low insertion loss and minimal back reflection.

Amphenol designed its patented TFOCA-II® connectors to survive the harshest battlefield conditions imaginable. As a result, the U.S. ARMY WIN-T program selected TFOCA-II® as the standard "next generation" fiber optic connector for military tactical deployable networks.

FEATURES AND BENEFITS

- Hermaphroditic design enables daisy-chaining of cable assemblies to support varying distances
- Over 400lbs cable retention strength
- Solid alignment sleeve design provdies more robust field durability
- 3 keying positions available
- Zn-Ni plating is more durable than standard cadmium plating

ADDITIONAL FIBER OPTIC CONNECTORS

- **MFM:** Single Way Connector

- **BDC:** Bayonet Duplex Connector

- **MBC:** Multiway Bayonet Connector

DESCRIPTION

Amphenol manufactures a complete line of circular fiber optic connectors designed and qualified to MIL-PRF-28876, Rev. E. These connectors are precision machined to stringent tolerances and designed to provide superior optical performance in extreme environmental conditions.

The backshells feature the Quickloc™ captivation system developed by Amphenol. Not only is it simple to install, it is also easy to remove the captivated aramid yarn of the cable and recapture without cutting back the cable. The Quickloc™ backshell also allows easy access to maintain or reconfigure termini without altering the captivated aramid fiber.

FEATURES AND BENEFITS

- Backshell design allows simplified, removable aramid yarn captivation with no mechanical crimp rings
- Quickloc™ design enables faster maintenance or repair without complete dissemble of connector backshell assembly
- Commercial-off-the-Shelf versions of this product are available in other materials and platings
- Six keying options (plus universal keying for COTS product) for both plugs and receptacles

M28876: US NAVY STANDARD FIBER OPTIC CONNECTOR

SPACE FLIGHT PRODUCTS

DESCRIPTION

Amphenol designs and manufactures the highest performance assemblies for phase critical application.
Our product line for spaceflight applications expand our offerings to address critical parameters including lightweight, radiation resistance, and low out gassing. Products are tested and qualified to strict Nasa and ESA standards. Assembly manufacturing is done in a 100,000 class clean room environment.

FEATURES AND BENEFITS

- Extensive Product offering addresses all spaceflight applications
- High Reliability
- Leading edge phase performance
- Lightweight

DESCRIPTION

Amphenol's new 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 allowing for extreme flexibility with customized wafer-loading patterns.

APPLICATIONS

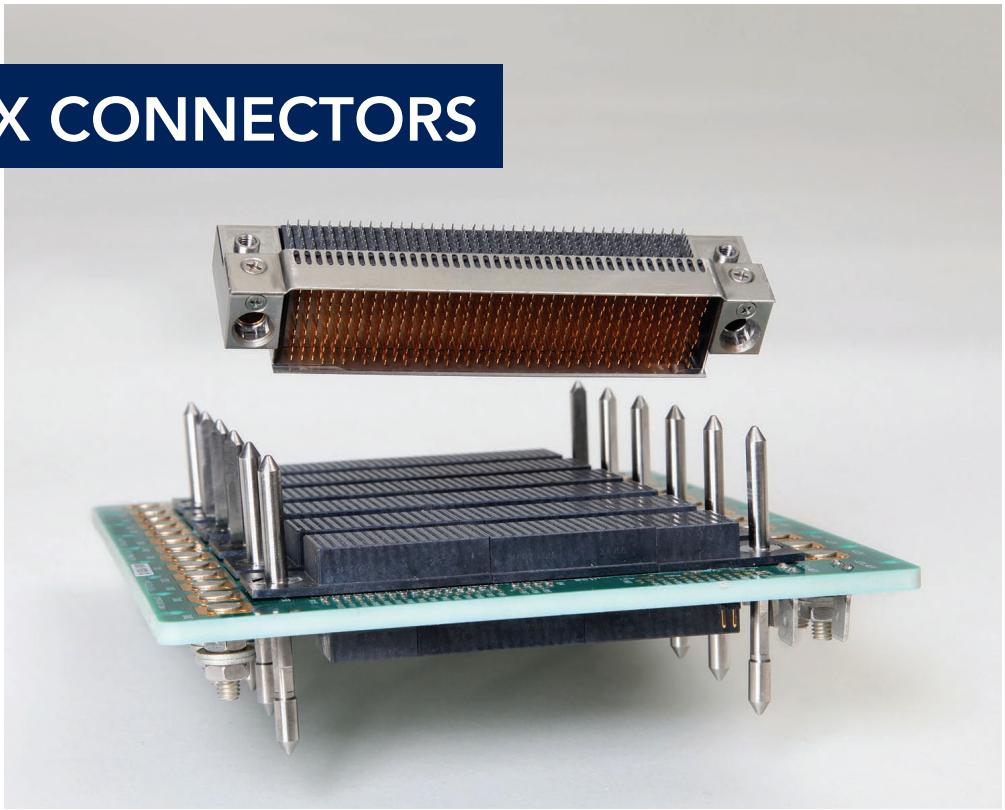
- Commercial and Military Aerospace
- Electronic Systems/C4ISR
- Ground Systems
- Missile Defense
- Space Systems

FEATURES AND BENEFITS

- Compliant to VITA 46 for Open VPX applications
- Meets and exceeds VITA 47 and 72 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
- Can be combined with high power modules, RF modules (VITA 67) and Optical modules (VITA 66)

R-VPX CONNECTORS

VIPER™ VPX CONNECTORS



DESCRIPTION

Viper connectors offer a ruggedized VPX-compliant interconnect solution capable of up to 10 Gbps. With 63 differential signals per linear inch, this high density connector system was developed to meet current and future requirements for high speed in high-level vibration and mechanical shock environments.

Footprint compatible with VITA 46 connectors to leverage existing module card designs, Viper provides a ruggedized solution ideal for harsh environments and military applications. Several options for customization mean Viper is extremely flexible to support a wide varety of application requirements.

FEATURES AND BENEFITS

- High speed differential design offers proven 10 Gbps performance
- User configurable keying options mean a PCB notch is not required, simplifying PCB design and manufacturing
- Pressfit termination of both daughtercard and backplane connectors offers a proven and reliable method for easy installation.
- Four points of contact on signal pins provide high reliability even in high vibration applications

DESCRIPTION

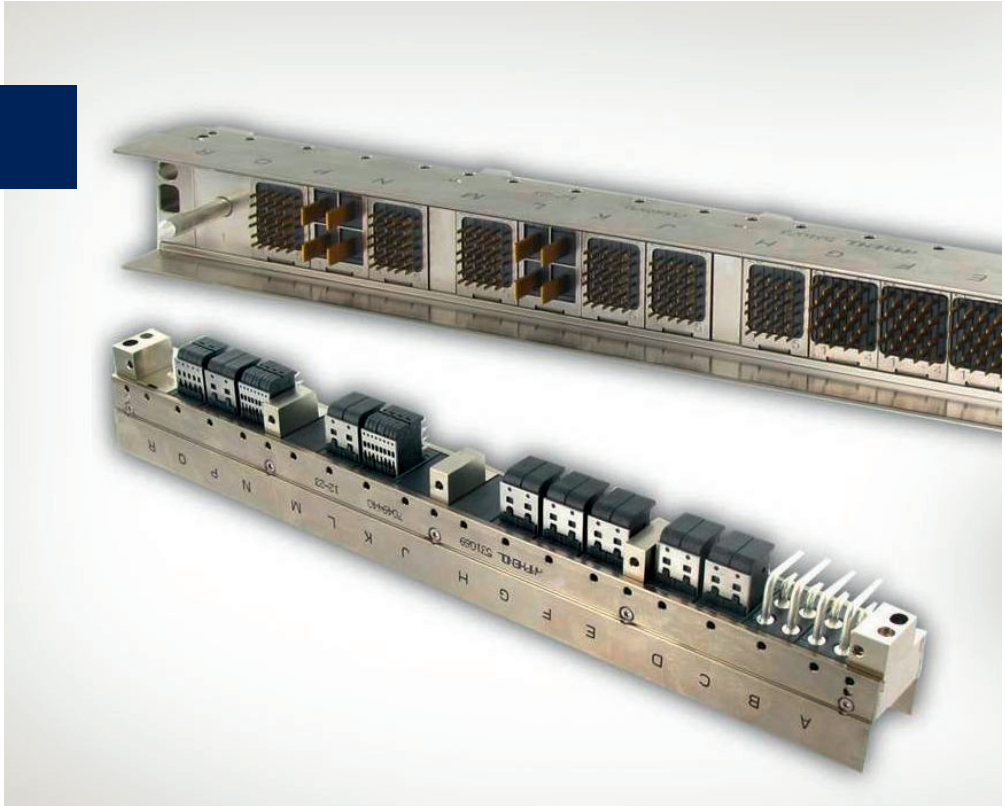
Mixed signal and innovative integrated RF contacts in a rugged rectangular package, to provide a compact high-speed interconnect product.

FEATURES AND BENEFITS

- Grounded integrated quadrax/triax/twinax/coax can be designed into any rectangular package
- Combining contact technologies for mixed signal requirements
- Rugged, compact design for demanding shock and vibration environments
- Reduced footprint and connector size; integrated panel designs targeted as well

R38 SERIES INTEGRATED RF

MODUL'R



DESCRIPTION

Amphenol's MODUL'R high-speed module is designed to enable future data requirements of commercial avionics & airframe equipment: XAUI, Ethernet, PCI Express, SDH, InfiniBand, SATA. The 15 Gbps+ high-speed module is based upon a brand new technology of differential pairs, allowing great performances across a wide frequency spectrum while being compatible with thermal devices. Thanks to the MODUL'R strong & ruggedized mechanics, the module meets the harsh environment requirements.

The wafer technology is based upon:

- A stamped turning fork female contact
- A blade male contact
- Correctly oriented into their own cavities
- By design, these contacts can float
- This technology of contacts permits a lateral displacement of ± 0.4 [.015]
- Male routing within the wafer provides de-skewed differential pairs
- 8 pairs per module
- 100 ohm matched impedance differential pairs

The high-speed wafer advantages:

- High-data rates up to 15Gbps per differential pair
- ± 0.4 [.015] lateral displacement compatibility allowing the use of thermal clamps
- Exceptionally rugged – to fulfill the market needs 100 ohm differential impedance
- 3.7 differential pairs per cm2 (24 differential pairs per square inches)
- Proven reliability of press-fit attachment for a cost effective on-board assembly
- Propagation delay skew within each differential pair inferior to 5ps

DESCRIPTION

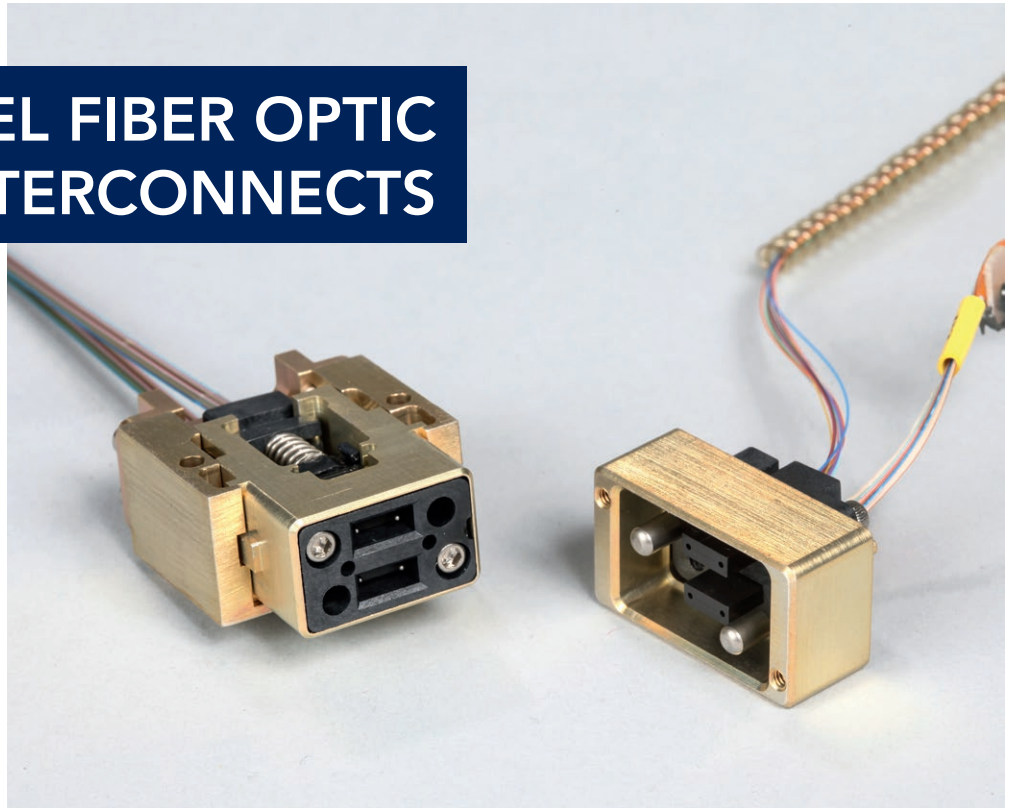
EN4165 High Density MT Series are Fiber Optics interconnects for high speed / bandwidth communications. They use custom designed inserts to accommodate MT ferrule type based standard MTP/MPO multiple fibers connectors. They also meet EN4165 specifications.

FEATURES AND BENEFITS

- MTP/MPO directly plugs and locks itself into the SIM/EN4165 compatible insert. It can be easily removed for repair
- From 12 to 48 fibers
- Multimode and Single mode type
- The P (male) insert is fitted with an interfacial compression seal. It is the one which by default will accept the MTP/MPO equipped with guiding pins.
- The S (female) insert has no interfacial seal
- Both P and S inserts have molded pre alignment tabs for pre-positioning during mating of connectors

EN4165 HIGH DENSITY MT SERIES

BOARD LEVEL FIBER OPTIC INTERCONNECTS



VME P0/J0 FIBER OPTIC CONNECTORS

Amphenol provides a fiber optic interconnect for attachment to standard VME-64x cards and backplanes for the P0 and J0 locations of the boards. It uses "MT" ferrules and it is used in place of P0/J0 electrical applicable connectors. MT ferrules are not supplied by Amphenol. Connectors are supplied less the MT ferrules.

PERFORMANCE FEATURES INCLUDE

- Tested to IEEE 1156.1-1993
- Operating temperature from –55°C to +125°C
- Shock: 100g, 6ms, 1/2 sine, 18 pulses
  Shock: 30g, 6ms, 1/2 sine, 18 pulses
- Sine vibration: 10g, 40 min./axis, 3 axis
- Random vibration: 0.15g2 Hz, 40 min./axis, 2 axis
- ESD: 15KV/150 pF

Amphenol's VME P0/J0 fiber optic connectors are used in military and commercial aviation, military vehicles and GPS systems. They are designed to customer specifications.

VITA 66.1 FIBER OPTIC CONNECTORS

Amphenol's proposed VITA-66.1 MT connector provides a reliable high speed connection for the most extreme commercial and military environments. This ruggedized interconnect is among the highest density of connector products on the market.

MT FERRULES

- Up to 24 fiber optic channels per MT ferrule
- Up to 48 channels per connector
- MT ferrules are not supplied by Amphenol. Connectors are supplied less the MT ferrules.

DESCRIPTION

This 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.

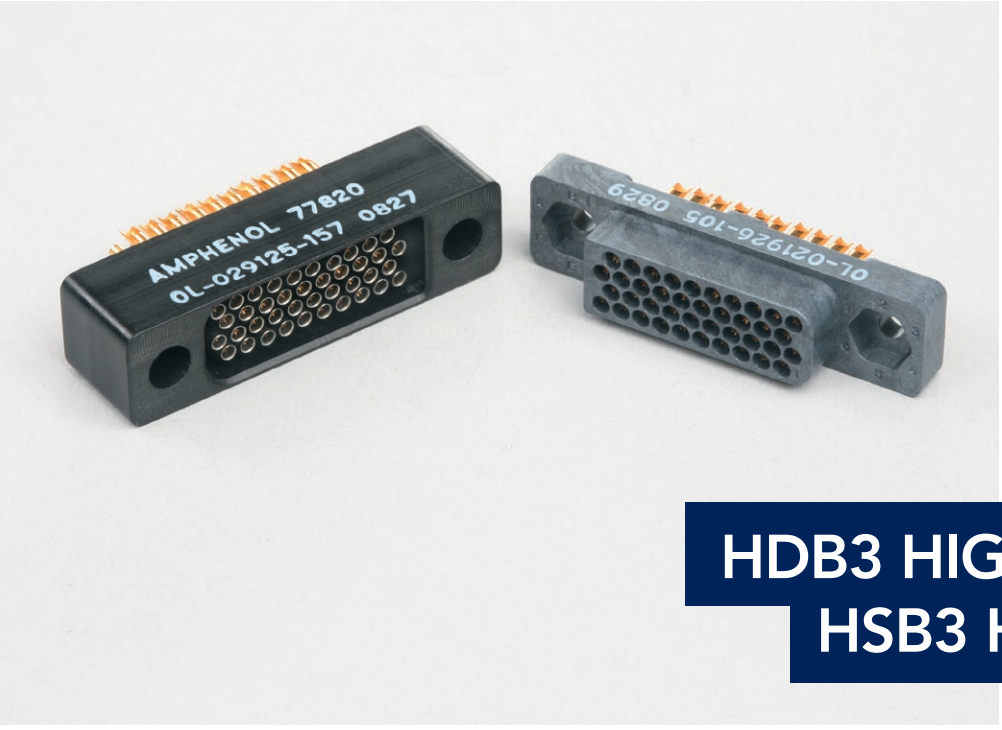
FEATURES AND BENEFITS

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

CONNECTOR OPTIONS

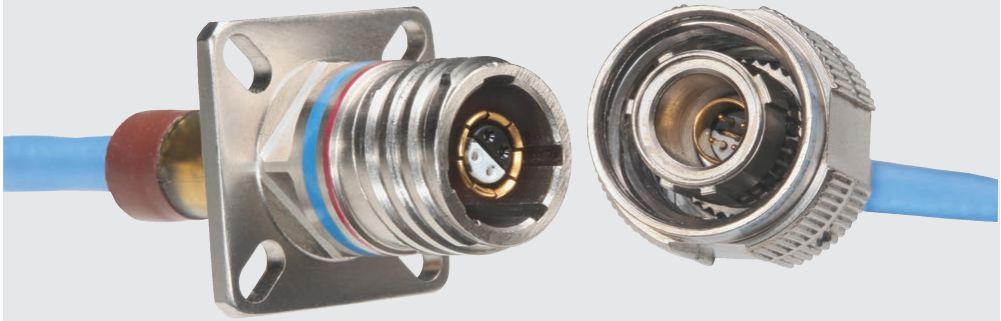
- HDB3 Mother Board Connector
- HDB3 Daughter Board Connector
- HDB3 I/O Connector
- HDB3 Stacker Connector
- HSB3 Mother Board Connector
- HSB3 Daughter Board Connector

Amphenol HDB³ Compared to Competition			
Connector Features	**Amphenol HDB³**	**Hypertronics PH**	**Airborn RM4**
Contact System	Brush	Hyperboloid	Pin & Socket
Durability, Mating Cycles	100,000	2,000	500
Contact Mating Forces (ounces)	1.5	1.5	2.5
Mother Board	.070 X .060	.075 X .075	.075 X .075
Daughter Board	.070 X .060	.075 X .100	.075 X .075
Connector Width	.350	.443	.400
Mated Height, MB to 4th row of DB	.680	.986	.915



HDB3 HIGH DENSITY/ HSB3 HIGH SPEED

HIGH-SPEED COPPER CONNECTORS AND CABLE ASSEMBLIES



DESCRIPTION

Amphenol connectors are ideally suited for the incorporation of shielded contacts for high performance interconnection applications. The circular family is built around MIL-DTL-38999 specifications, with Mil-approved and commercial styles offered. Other connectors that can incorporate high-speed contacts include: MIL-5015, MIL-DTL-22992, and various Board-Level interconnects. Amphenol provides a large array of cable assemblies with high speed quadrax and differential twinax contacts, as well as coax and concentric twinax contacts. Amphenol strives to offer customers the widest range of cable assemblies, including the latest cable types in the marketplace. From a simple one-cable interconnection, to a multiple cable system, Amphenol can design and supply your cable needs for high frequency contacts and connectors.

CONNECTOR OPTIONS

- Oval Contact System (OCS) Connectors
- D38999 Connectors with Coax, Concentric Twinax, and Triax Contacts
- D38999 Connectors with Quadrax, Differential Twinax Contacts
- Board Level Connectors with Quadrax Contacts
- LRMs with High Speed Contacts
- Hybrid M55302 LMF Connectors with High Speed Contacts

CONNECTOR OPTIONS

- Split-Pair Quadrax Contacts & Cable for D38999III Size 8
- Quadrax Contacts, D38999III, Size 8
- Differential Twinax Contacts, 38999III, Size 8
- Compliant Quadrax Contacts
- PC Tail Quadrax Contacts
- Quadrax Transition Adapters
- Differential Twinax Transition Adapters
- Amphenol Micro D-Twinax Transition Adapters
- Coaxial Contacts for MIL-DTL-38999, Sizes 8, 12, and 16
- Matched Impedance Coaxial Contacts, Size 12
- High Frequency Contacts for D38999III, Sizes 8, 12, and 16
- Twinax Contacts for MIL-DTL-38999, Sizes 8, 10, and 12
- Triax Contacts for MIL-DTL-38999, Sizes 8, 10, and 12
- Coax, Twinax, and Triax PC Tail Contacts
- Coaxial Contacts for MIL-DTL-5015, Heavy Duty MIL-DTL-22992 Connectors
- High-Speed Contacts for Rack & Panel Connectors

DESCRIPTION

Amphenol offers a wide range of fiber optic connectors solutions for use in the harsh environments found in military and aerospace applications. We have established the rugged and reliable MIL-DTL-38999 as a common connector shell platform that houses a wide variety of fiber optic termini. These termini can be combined with most of our copper contacts to create a large assortment of hybrid fiber/copper connector combinations. Our rectangular interconnect products include a variety of applications including LRM surface mount and rack & panel styles – all available in hybrid fiber/copper configurations. Amphenol offers a comprehensive line of single-mode and multi-mode cable assemblies in a variety of cable configurations. From sim¬plex jumpers to multi-fiber custom assemblies, Amphenol can design and supply all of your cable needs.

CONNECTOR OPTIONS

- CF38999 Multi-Channel Fiber Optic Connectors
- Fiber-to-Antenna (FTTA) Interconnect Solutions
- JSFC15 & JSFC16 Plug Connectors
- ARINC 801 Fiber Optic Connectors
- 38999 Series III MT Ferrule
- Fiber Optic Bulkhead Feed-Through
- Board Level & Rectangular Fiber Optic Connectors

TERMINI OPTIONS

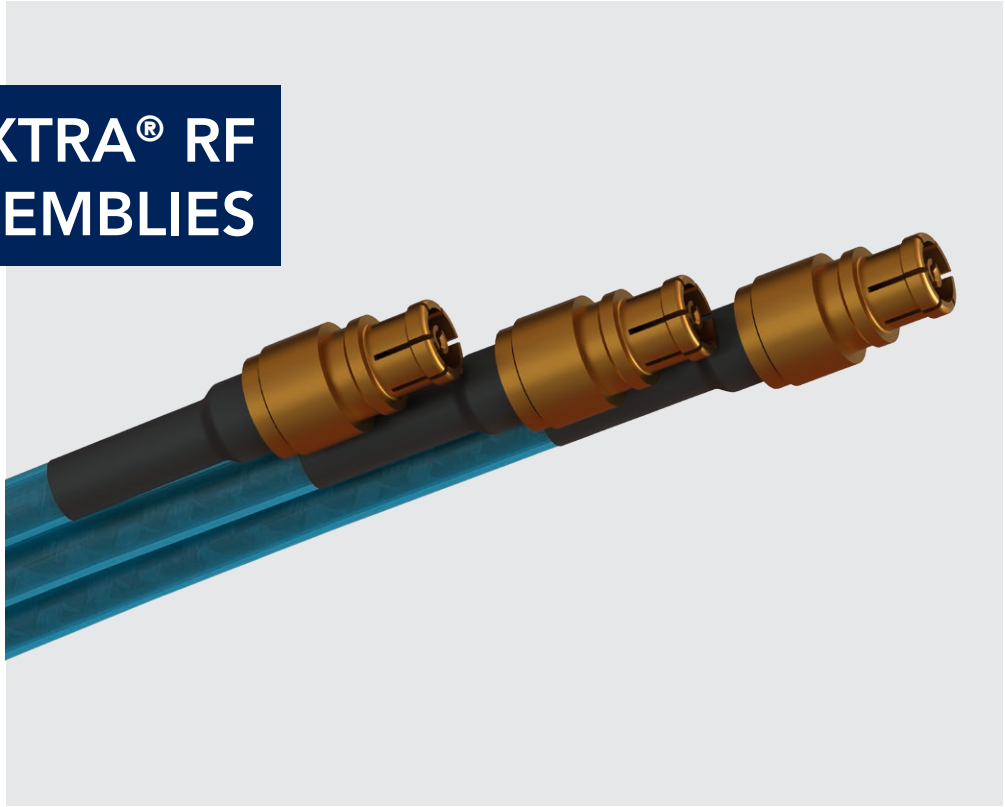
- CF38999 Multi-Channel Fiber Optic Contacts
- MIL-PRF-29504 90 Deg Multi-Mode Size 16 Termini
- HD20 Multi-Mode Termini
- JSFC17/JSFC18 Fiber Contacts
- ARINC 801 Multi-Channel Termini
- MT Ferrule Termini

CONNECTOR OPTIONS

- Point-to-point
- Open Wire Harness Assemblies
- Over-molded Cables
- Higher Level System Assemblies including Panel and/or Box Manufacturing

FIBER OPTIC CONNECTORS AND CABLE ASSEMBLIES

FLEXTRA® RF CABLE ASSEMBLIES



DESCRIPTION

Amphenol's high performance FleXtra® Ø.047-style cable assemblies are available in multiple variations and will surely fit your needs. Choose from a wide variety of industry standard connector styles or custom designs to meet your performance requirements.

FEATURES AND BENEFITS

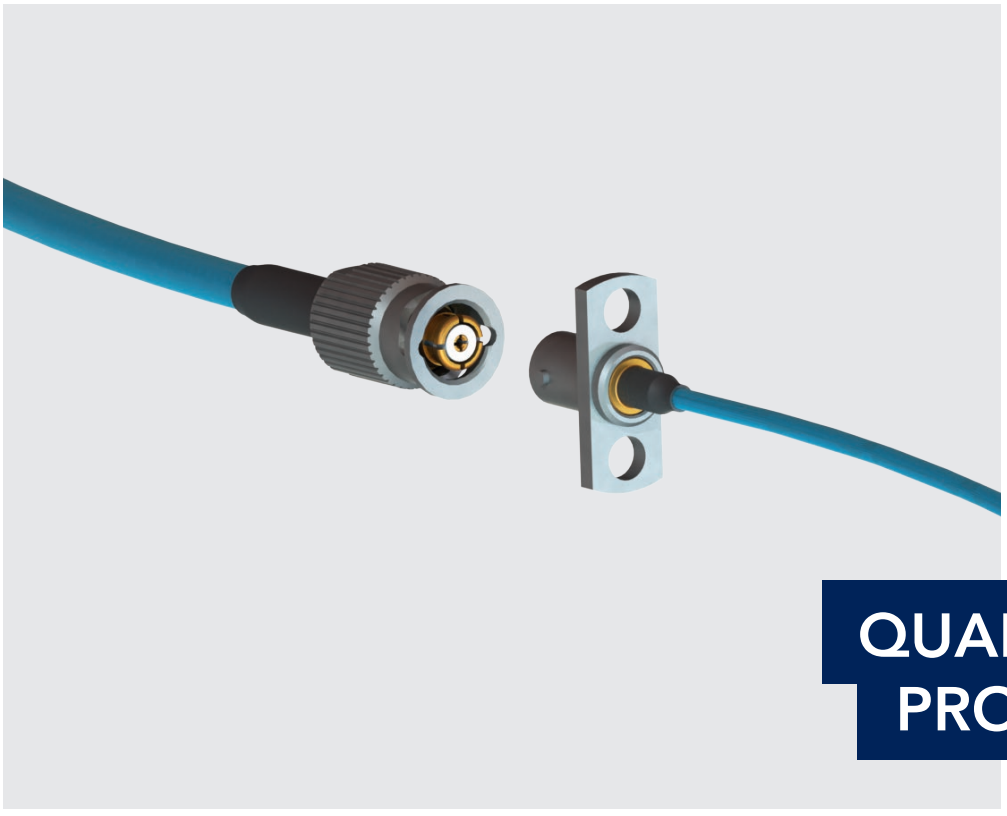
- Standard and custom cable options include: SMA, BMA, 2.92mm, SMP, SMPM and SMPS
- Ideal for inside-the-box short cable run applications where space is at a premium and tight bends are required
- Excellent electrical performance at high frequency (up to 100 GHz)
- The most flexible cable options available with proven performance at < 0.125" bend radius
- Low solder wicking and high flex ability allows for tight bends behind the cable ferrule
- High flex-life ensures excellent performance after repeated usage

DESCRIPTION

High Frequency Connectivity with a Twist! Amphenol has released a new line of connectors called the QuarterBack® series. The line utilizes a quarter turn bayonet style coupling nut with a locking feature for standard SMP/SMPM interfaces. The QuarterBack® connectors are ideal for high vibration and test applications that require a large number of mating cycles.

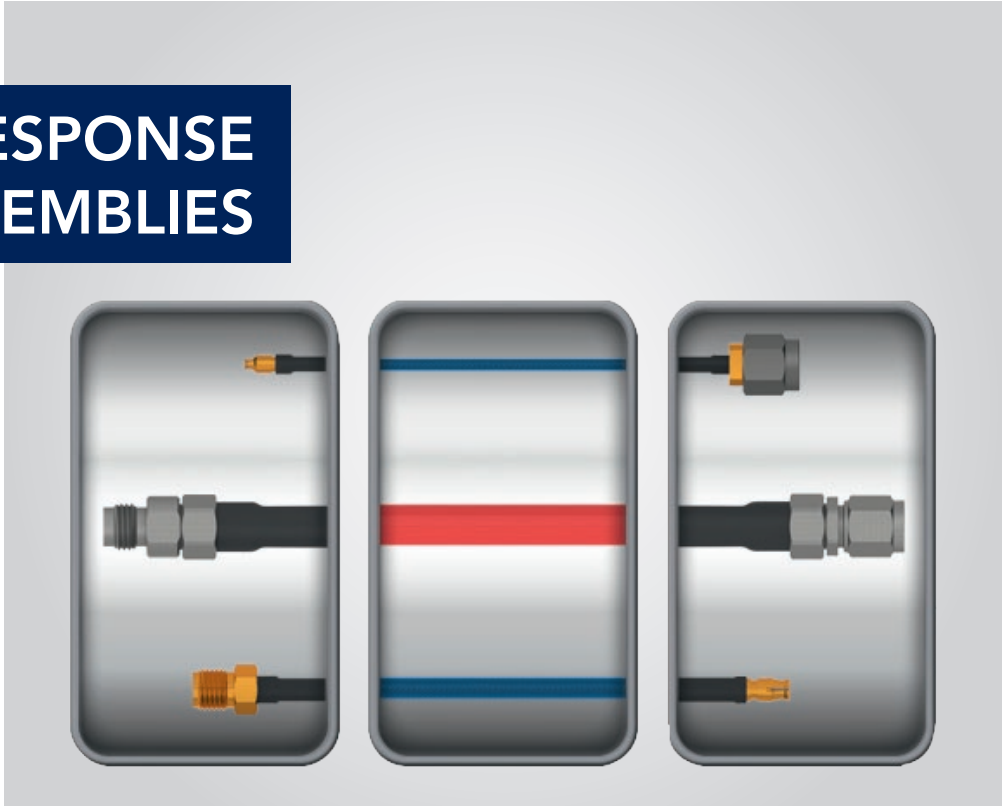
FEATURES AND BENEFITS

- Quarter turn bayonet locking feature on standard SMP/SMPM interface
- Low VSWR through 40 GHz(SMP)/65 GHz(SMPM)
- Female cable connector options available for all flexible cable types .086" diameter and smaller
- Low insertion/extraction forces, compared to standard full detent SMP and SMPM, mean less torque on board mount connector solder joints during mating and demating
- Spring loaded positive mating feature allows excellent electrical performance even in extreme vibration environments
- Ideal for applications requiring a high number of mating cycles



QUARTERBACK® PRODUCT LINE

RAPID RESPONSE CABLE ASSEMBLIES



DESCRIPTION

Amphenol's New Rapid Response Cable Assemblies are built-to-order and ship within 5 business days. Using the best interactive RF cable builder application in the market, customers can build cable assemblies designed for their specific application, instantly view pricing, technical specifications and electrical performance graphs and place an order. Choose from a variety of in-stock standard connector series and cable types with length up to 99" for miniature and low loss coaxial assemblies.

View online at :
https://www.svmicrowave.com/products/rf-cable-builder

FEATURES AND BENEFITS

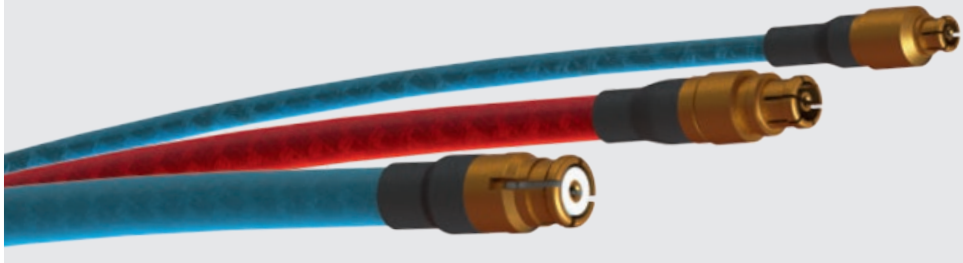
- Design miniature and low loss coaxial cable assemblies for your specific application
- Choose from a variety of in-stock standard connector series and cable types with length up to 99"
- Over 125 connector and cable combinations available
- Instantly view pricing, technical specifications and electrical performance graphs
- Online order placement (credit card or PO)
- Mobile compatible with android/iOS

DESCRIPTION

Amphenol's miniature high performance SMP, SMPM & SMPS product lines utilize blindmate / push-on for quick and easy installation. With performance up to 100 GHz (SMPS), these are ideal for mil-aero, broadband, instrumentation and telecommunication markets. Amphenol's line includes surface mount, multiport, edge launch, cable assemblies, components and adapters.

FEATURES AND BENEFITS

- Blindmate design
- RF performance DC to 40 GHz (SMP), 65 GHz (SMPM) & 100 GHz (SMPS)
- Designed to accommodate radial, axial and angular misalignments
- Intermateable with other industry standard connectors
- High density packaging possibilities
- Ideal performance even under misaligned conditions



SMP, SMPM & SMPS CONNECTORS, COMPONENTS, ADAPTERS AND CABLE ASSEMBLIES

MEDIA CONVERTER FAMILY

DESCRIPTION

Amphenol High Speed Solutions offers copper to fiber and fiber to copper media conversion with our hybrid integrated connectors. The family consists of protocol independent and ethernet media conversion converters with more products being developed to meet our customers application needs.

DIGITAL MEDIA CONVERTERS

- 1 to 24 channels of conversion
- Uni- or bi-directional configurations
- DC to 10 Gbps of conversion per lane

Compatible Standards:
DVI or HDMI; SGMII; IEEE Ethernet standards; 1G, 10G, 40G, and 100G

ANALOG MEDIA CONVERTERS

(typical power consumption: 5W)

- High speed—from 160Msps to 4Gsps
- 1-8 lanes of conversion
- 12-16 bits of resolution
- Trigger internally or externally
- Optional fiber conversion
- JESD204B interface

ETHERNET PHYS MEDIA CONVERTERS

(typical power consumption: 10W)

- Integrated PHY
- SGMII to BASE-T
- 1 to 8 ports (option for more)

OPTO-ELECTRONIC CONTACTS

(typical power consumption: 0.8W per contact)

- Up to 10 Gbps
- Uni- and bi-directional configurations
- 4 channels of conversion in one D38999 connector 25-8 arrangement

Compatible Standards:
SGMII; IEEE Ethernet standards; 10/100, 1G, and 10G

DESCRIPTION

Amphenol designs and manufactures custom-made Rugged Ethernet devices & Optical Fiber Media Converters for all military applications. Our products are designed to operate within severe, harsh environments (shock, vibration, temperature, & EMI) and comply with MIL-standards for EMI (MIL-STD-461), environmental conditions (MIL-STD-810), and power requirements (MIL-STD-1275).

Amphenol's wide range of Ethernet products offer gigabit ports over field connectors (CTOS, RJF, 38999) and up to 10 Gbits/s over fiber! They enable robust networks within ground vehicles, deployment of IP systems over far distances in hostile areas, and installation of detection systems onto the deck of a vessel.

FEATURES AND BENEFITS

- Managed/Unmanaged Military Ethernet Switches available
- Proven in severe, harsh environments
- Gigabit ports over field connectors (CTOS, RJF, 38999) and up to 10 Gbits/s over fiber

ETHERNET SWITCHES

MEDIA CONVERTERS

DESCRIPTION

Amphenol's RES-GMC is a MIL-STD rugged, unmanaged-military-grade security gateway, offering up to 2 Gigabyte security gateways per device for unidirectional and data diodes solution for total isolation between two networks with different security classification. The unit supports PoE on 2 ports (IEEE802.3af and IEEE802.3at). Developed for military and harsh environment applications, the RES-GMC features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability.

FEATURES AND BENEFITS

- 10, 20 and 40Gb transceivers
- Copper to fiber transition in a rugged package
- Harsh environment transceiver support extended temperature range and military vibration/shock requirements
- Supports single mode or multi-mode operation
- Keeping the fiber outside the enclosure means simpler integration
- Interface with ARINC, EN and TFOCA interconnects

DESCRIPTION

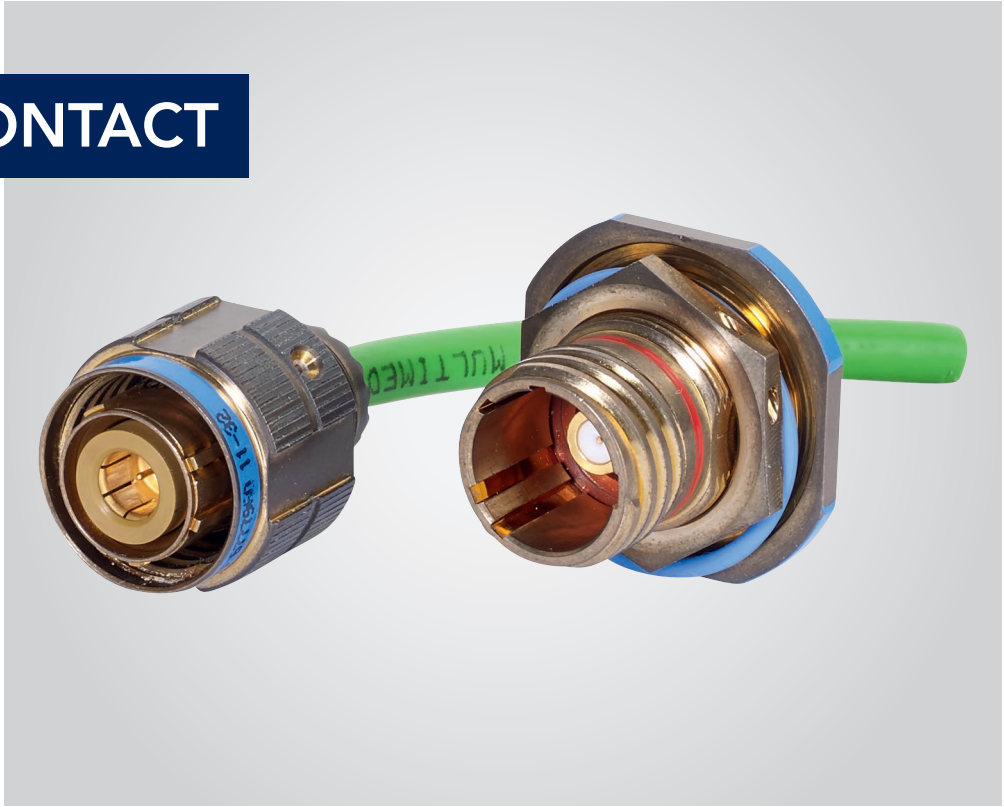
ARINC429 is an avionics equipment and system communications specification using twisted pair wires. The specification defines the physical, electrical and data characteristics and software protocols of the module. ARINC429 is a unidirectional data bus, transmitting messages at either 12.5Kbs or 100Kbs, with a characteristic impedance of 78ohms that transmit and receive signals using separate lines without a separate clock signal, ensuring highly reliable communications. The Low Frequency Signal Distribution Module enables fast and efficient communication between avionics systems, such as Airborne Weather Radar, Inertial Reference Systems, Thrust Management Computers, Tire Pressure Monitors, and more.

FEATURES AND BENEFITS

- Designed for ARINC 429 signals
- Able to distribute signals in range of 0-100KHz
- Outer dimensions according to Series 1750 and mountable on same rails Supports multiple cable types / others on request
- Up to 6 input/output port connections per module in a compact size Enables remote location of transmitter from receivers
- Concentrates signals, lowering weight through reduced wire run length Internal PCB construction maintains signal characteristic impedance.

LOW FREQUENCY SIGNAL DISTRIBUTION MODULE ARINC 429

75 OHM CONTACT



DESCRIPTION
MIL-DTL-38999 Series I, III / EN3645

FEATURES AND BENEFITS
- MIL-DTL-38999 / EN3645 Connectors
- Crimp and PCB version available
- Meet 3G-SDI video format

MATERIALS AND FINISH
- Sleeve : Stainless steel
- Contact & Ferrule : Copper alloy
  Insulator: PTFE
- Rear Body & Contacts: Gold over nickel

SEE ALSO
OCTONET®

DESCRIPTION

Amphenol can offer bespoke solutions for harsh environment high speed data interconnection requirements. Project specific or standard transmission line impedance values can be incorporated. Hermetic performance to extremes of pressure and temperature (e.g. 60,000 psi & 950 deg C) can also be achieved. They offer reliable fluid separation solutions under extremes of pressure and temperature and can be manufactured in a variety of materials including stainless steel, titanium or duplex steels.

Amphenol can conduct product or programme specific qualification and acceptance activities to support customer development lifecycles.

FEATURES AND BENEFITS

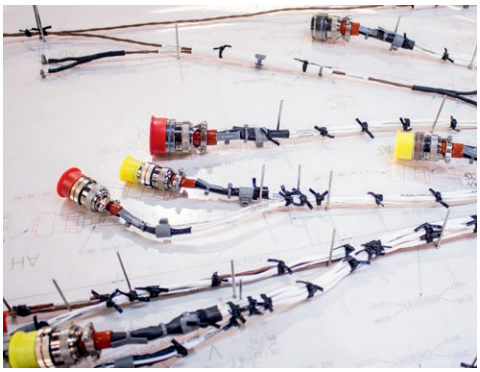
- Matched impedance designs with low insertion loss
- Twisted pair interfaces
- Patented 90 ohm hermetic, pressure tolerant glass to metal seal
- Standard interfaces (e.g. USB 2.0 / USB 3.0 / SMB)
- Low resistivity / non magnetic hermetic sealed conductors
- HF signal attenuation performance assessments
- Pressure differential capability to > 60,000 psi (400 MPa)

HIGH SPEED HERMETICS

VALUE ADD

DESCRIPTION

Amphenol designs and manufactures point-to-point cables and complex, multi-branch wire harnesses. From Mil-Spec connectors and backshells to specialized wire processing & EMI shield braid equipment.

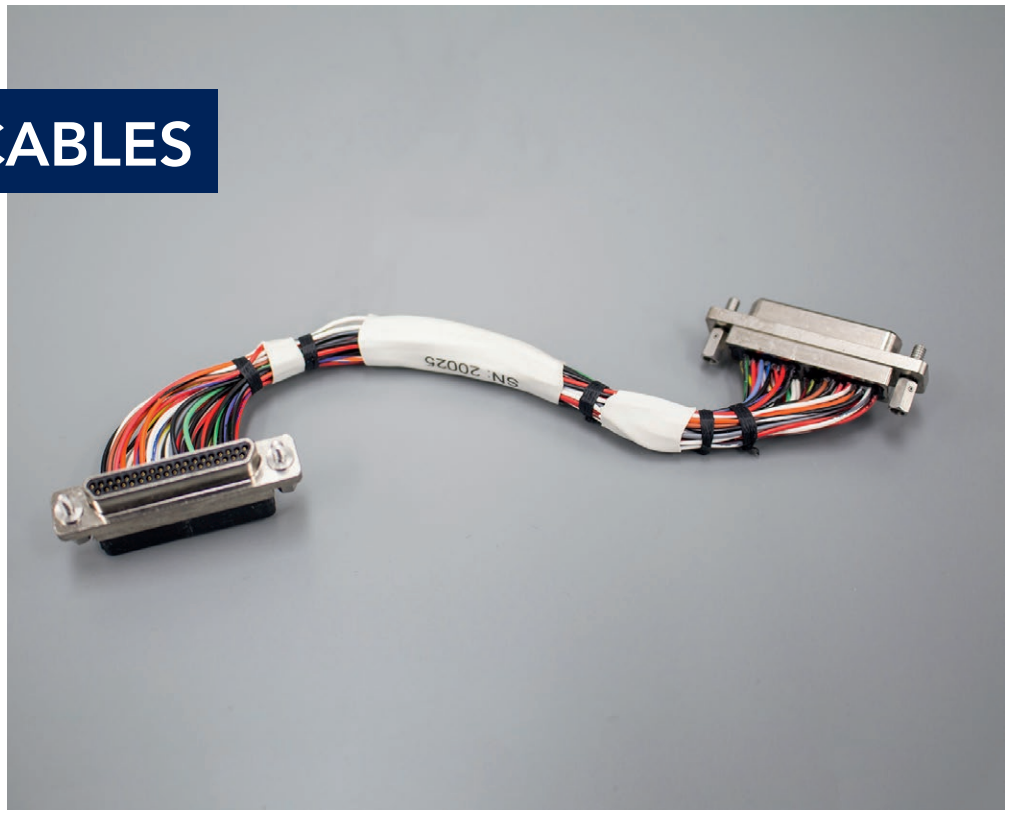


FEATURES AND BENEFITS

- Dedicated Program Management and Design Engineering Support
- Quick-Turn Prototypes
- Custom Backshells and mold transitions
- Custom Cable Design & Layup
- EMI Shielding
- Full In-House Test Capabilities: ESS & Electrical Test
- Strategic Supply Chain and Aggressive Material Cost Management
- Low Cost Manufacturing: Nogales, MX (ITAR Approved)

CABLES

MICRO-D CABLES



DESCRIPTION

Amphenol designs & manufactures customized point-to-point and multi-branch cables with integrated crimp Micro-D connectors. Application-specific engineering provices both mechanical and electrical solutions to optimize performance and fit.

FEATURES AND BENEFITS

- Micro-Miniature connectors dense electronics packages
- QPL Approved: Ensures intermatability and performance
- Cost effective & more reliable alternative to solder cup solutions
- Custom backshells and transitions for low profile applications
- Broad range of wire processing and cable types
- EMI Shielded Cables
- High Speed & Signal-Integrity Analysis

DESCRIPTION

Amphenol's Cable Solutions division is the value-added division at Amphenol Corporation supporting the Military, Aerospace and Commercial Avionics markets. This facility is both ISO 9001and AS9100 certified. The facility is ITAR registered and comes with a work force averaging ten years of manufacturing experience.

At Amphenol we specialize in the craftsmanship of the following types of cable assemblies:

- Molded Cables for Tactical Digital Communication
- Custom Molded Cables for Harsh Environments
- PRC 117F/G and PRC-152 Radio / Data Cables
- Mil-22992 Class L Heavy Duty Power Cables
- Soldier Accessory Connectors and Cables
- Training and Simulation Cables
- High Speed Data Transmission Cables
- Ruggedized Ethernet Cable Assemblies
- Point to Point Ground Vehicle Wiring Harnesses (internal and external to enclosures)
- Cable Adapters

At Amphenol, our Cable Solutions are focused on supporting the Military, Aerospace and Commercial Avionics markets and do so with 100% production done in the US. Being part of the Amphenol family, we have close alliances with other Amphenol divisions which enable us to competitively offer full-turnkey integration of any connector onto a cable assembly. This includes Amphenol mil connector products D38999s, M55116, M55181, M24308, M26482, Nexus Audio & TAC, and Micro-subminiature circulars such as Terrapin (SCE) and 2M.Our Engineering staff is ready to assist companies with any new design effort from connector selection to full cable assembly design. We also offer quick-turn prototype services and sustaining production programs with short lead times.

PCD CABLE SOLUTIONS

ADAPTER CABLES AND PIGTAILS

DESCRIPTION

Amphenol Cable Solutions specializes in a line of products allowing you to make the connection between virtually any interconnect technologies. Our PRC Kits, Cable Assemblies, Adapter Cables, Pigtails, and Accessory Adapters are examples of accessory products enabling turn-key integration of virtually any connector onto a cable assembly. This includes Amphenol's Mil-Spec connector products D38999s, M55116, M55181, M24308, M26482, Nexus Audio & TAC, and Micro-subminiature Circulars, such as Terrapin (SCE) and 2M.

FEATURES AND BENEFITS

- Standard cable lengths (Adapter Cables): 8 in, 10 in, 12 in
- Standard cable lengths (Pigtails): 6 in, 12 in, 18 in
- Custom cable lengths are available
- Wiring, labels, & molding markings can be customized upon request
- Meets IPC-WHMA-A-620B
- Quick turnaround times

DESCRIPTION

Amphenol is a leader in designing and manufacturing Aerospace Electrical Harnesses, offering complete coverage in this market. Typical applications include Rotary Wings & Regional/ Business Jets, Engines & APU, UAV & Missiles, Fixed Wings & Fighter Jets, and FTI & Test.

Some of our design and manufacturing capabilities include:

- Electrical Harness Design: 3D Harness Design for Installation
- Electrical schematics: Wiring List & BOM
- Form Board: 2D Routing
- Manufacturing engineering: Database extended with manufacturing tools, tool table, manufacturing files and test files
- Manufacturing: Wiring operations and inspections
- On site installation: Aerostructure integration
- Customer Support: Maintenance, repair, retrofit/upgrade

Some of our technological capabilities include:

- Clean Room (5000 ppm)
- Fiber Optic Wiring
- Aluminum Cable Termination
- Flex Cable Manufacturing & Assembly
- High Temperature Wiring
- Over-braiding (plastic and metal)
- Over-molding (IP67)
- > 4000 point testing
- Signal & Coax & Power Wiring
- RF & uwave design to 50 GHz
- EN/AS 9100

ELECTRICAL HARNESSES

MILTECH MICROWAVE CABLE ASSEMBLIES

DESCRIPTION

Amphenol MilTech cable assemblies have been designed and qualified to the harshest operating conditions and requirements of military aircraft. The product is Vapor sealed to a level 1x10-5 cc/sec/ft to assure prevention of contamination ingress. A Proprietary outer conductor design results in a product with exceptionally repeatable performance as needed for today's demanding application of amplitude and phase matched assemblies .

The product line is complemented with a wide of connectors that include all standard RF interfaces, self locking variants that eliminate the need to lockwire and a wide range of multiport connector that include our M8, V8, and MMP families along with contacts for M38999, and Arinc 600 connectors. TMS has hundreds of replaceable front end designs compatible with all Miltech cable types that will solve nearly any installation problem .

FEATURES AND BENEFITS

- Rugged Design
- Low Loss
- Frequency coverage to 50 GHz
- MTL variants for weight critical applications
- XR variants with coil suport for applications requiring extra ruggedization

DESCRIPTION

For more than 60 years, Amphen has been dedicated to the improvement of coaxial cable technology and the development of new and innovative cable products to address the increasingly rigorous demands placed on RF transmission products. Amphenol's expertise that has provided cable solutions for the demanding requirements of airborne electronic warfare systems has led the way in the development of low smoke cables for shipboard, airborne and ground based military interconnect systems. We provide the military with shipboard products that meet the strict low-smoke, non-halogen requirements for use in surface ships and submarines.

For ground based equipment we provide numerous solutions for military field deployable antennas. Our marquee QEAM (Quick Erecting Antenna Mast) cable is the ultimate for field deployable applications. This cable series is designed specifically for use in demanding, mission critical applications, where reeling and unreeling is required over a wide temperature range. Military vehicles can put exceptional demands on RF cables. They must survive temperature extremes, vibration, dust, dirt, rain and rivers and withstand nuclear biological chemical contamination. Along with a robust mechanical cross sections and unique jacket designs these cables need to have very good insertion loss and phase characteristics. It is these factors that make Amphenol the go to supplier for RF cables for today's modern communication equipment used in modern military vehicles.

FEATURES AND BENEFITS

- Fire Retardant (non-halogen)
- More QPL's (Qualified Product Listings) than any other manufacturer
- Excellent Shielding Effectiveness
- Rugged Abrasion Resistant
- Extra Strong Options available with ultra high pull and crush resistance
- Lowest Loss with best phase characteristics over temperature
- Environmentally sealed (IP-67) – in mated and unmated conditions

GROUND AND SHIPBOARD APPLICATIONS

IN LINE COMPONENT FOR MICROWAVE CABLE ASSEMBLIES

DESCRIPTION

Amphenol provide value added services and products needed to assure a complete and reliable RF interconnect system for military aircraft. By becoming involved in the early stages of the design of the RF paths Times is able to provide solutions that solve electrical and mechanical issues.

Solutions to electrical problems include equalizers that precisely balance the attenuation over a wide frequency range, attenuators, filters, and lightening protection. Incorporating these devices into the RF transmission lines, allows the same system to be used on multiple platforms without any changes to the LRU's. Amphenol has even integrated LNA's with equalization that makes the system see a lossless transmission line.

Mechanical components that solve installation issues include items such as rotary joints to allow cables to be routed over control surfaces, wing or tail folds, custom multiport connectors that fit specific profiles, or blind mate antenna mounts that allow antennas to replaced without having to disconnect the RF cable, eliminating the need for service loops or potential for damaged during the replacement process.

FEATURES AND BENEFITS

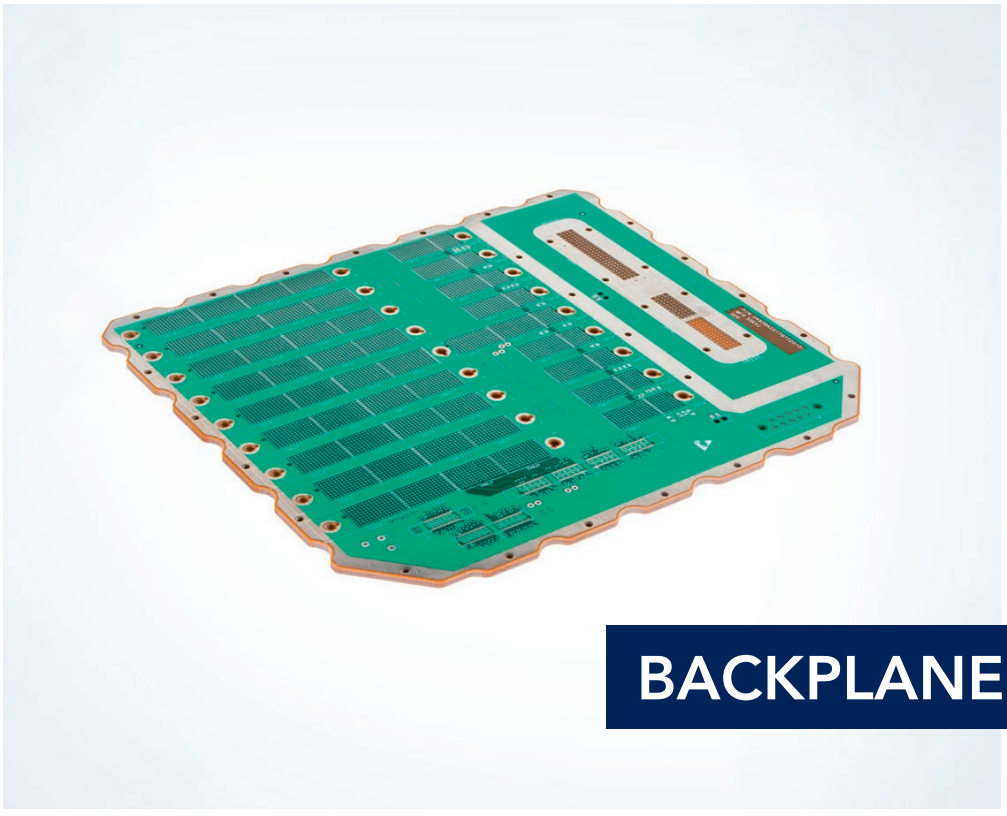
- Over 40 years of providing solutions
- Experienced Engineering Team
- Hundreds of qualified and proven solutions
- Fully integrated into the RF assembly

DESCRIPTION

Amphenol has extensive backplane assembly capabilities in Nashua NH and Nogales Mexico to serve the high reliability Mil-Aero market. Our products are used in some of the most demanding applications for avionics, radar, space, naval, ground and communications. Amphenol has the technical expertise in design and manufacturing and engineering support to ensure that a backplane assembly is built to meet customers requirements. Our quality system and process controls ensures that we deliver a quality product. Amphenol can manufacture assemblies of varying complexity from 2 layer flex to complex 60+ layer count rigid backplanes in low or production volumes.

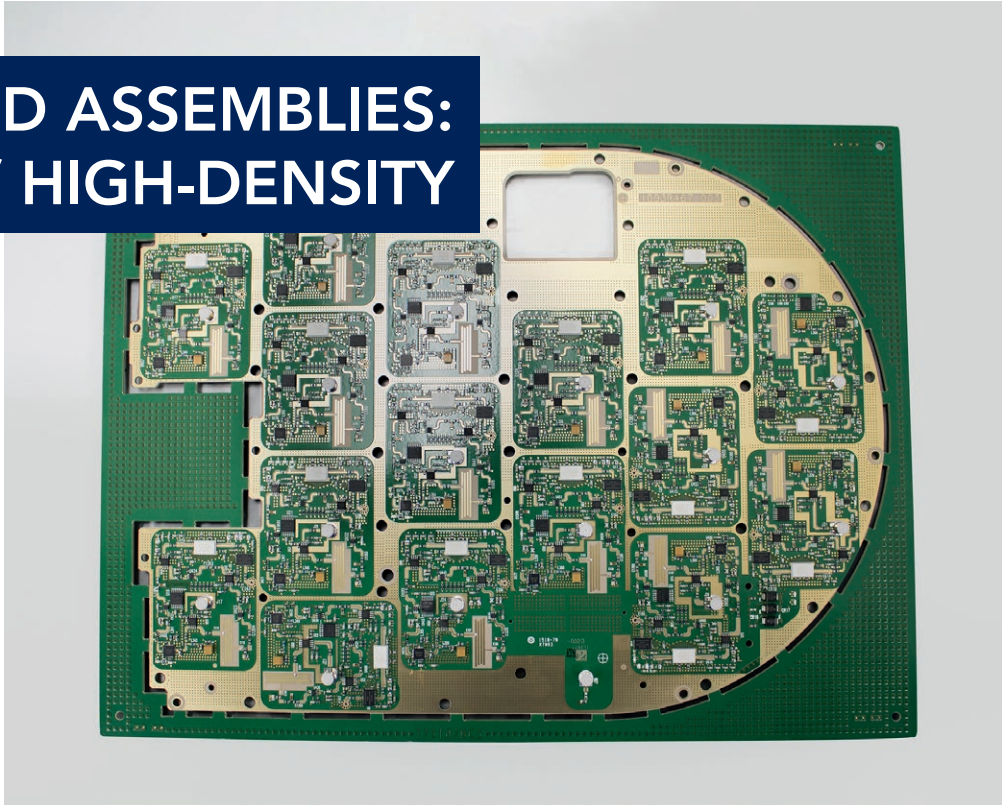
FEATURES AND BENEFITS

- Press-Fit
- Automated Press-fit
- Automated Xray Solder Joint Evaluation
- BGA/Hot Gas Rework System
- Jet Soldering
- Automated Soldering
- Fine-pitch/SMT
- ESS Thermal Cycling Chambers
- Automated Conformal Coating Application
- Automated continuity/isolation testing
- Potting/Encapsulation
- Continuous Wave Soldering



BACKPLANE ASSEMBLY

CIRCUIT CARD ASSEMBLIES: COMPLEX / HIGH-DENSITY



DESCRIPTION

Amphenol specializes in mission-critical circuit card assemblies with high component placement counts & high density component packages. Our Surface Mount Assembly line is capable of high-speed placement for all varieties of components from fine pitched IC's and BGA's to 0201 imperial package sized components.

FEATURES AND BENEFITS

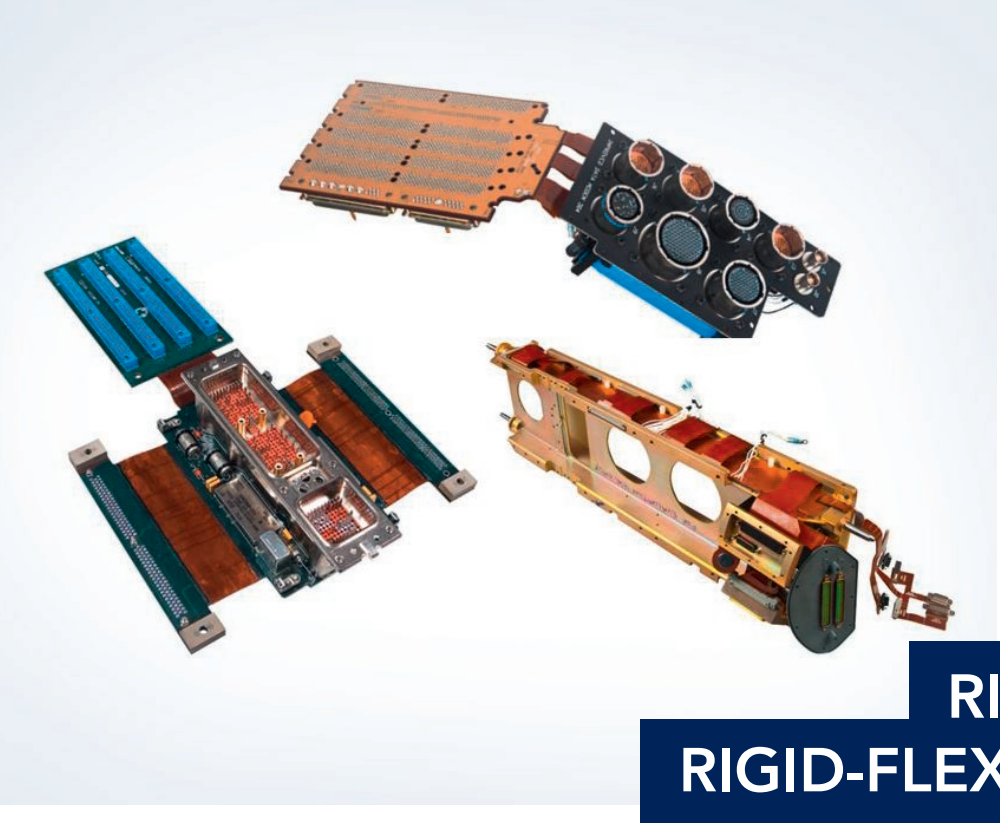
- Dedicated Program Management Support
- Pre and Post Reflow Automated Optical Inspection (AOI)
- 3D X-Ray inspection
- Intensive NPI (New Product Implementation) process produces high yield initial builds and a repeatable manufacturing process
- Allows for mixed-technology assemblies (SMT, Thru-Hole)
- Full range of in-house testing capabilitys for low and high volume production
- RF Board Assembly
- Select Solder
- Conformal Coating and Specialized Bonding

DESCRIPTION

Amphenol Flex and Rigid-Flex circuits and assemblies offer high conformability, low weight/mass and high signal performance in a limitless number of layer combinations and mechanical form-factors. Superior technical and design services ensure a winning solution for any application. Available with a multitude of termination options in packages capable of conforming to complex mechanical configurations.

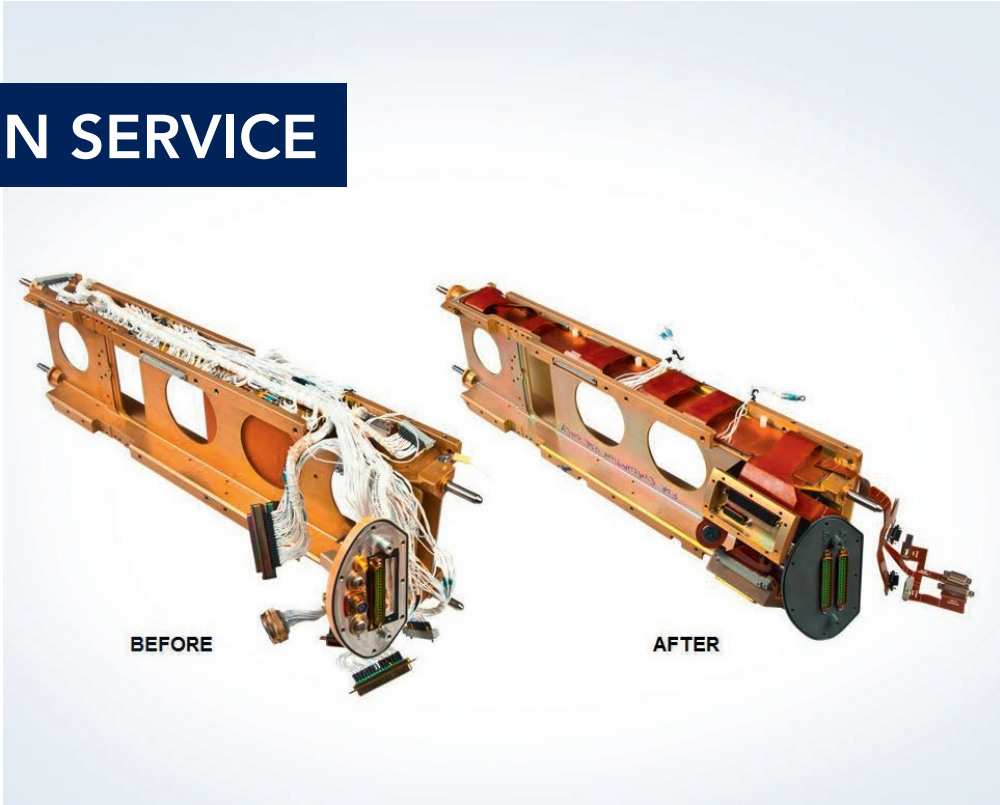
FEATURES AND BENEFITS

- Substantial weight savings (up to 70%) when compared to an equivalent discreet wire harness.
- Photolithography techniques ensure high signal performance, consistency and repeatability. Excellent signal integrity and electrical performance with low cross-talk, multiple shielding options and impedance control.
- Capable of supporting both static (flex-to-install) or dynamic (flex-during-use) applications in a variety of mechanical configurations.
- 24" X 36" panel size standard with larger formats available.
- Can accommodate a broad mix of termination styles including thru hole, surface mount, press fit, ZIF or any combination thereof.
- Capable of supporting a multitude of current and power requirements.
- USA or UK/EU manufacturing options.
- Quick Turn Capability from Prototype through to production.



RIGID-FLEX & RIGID-FLEX ASSEMBLY

PWB DESIGN SERVICE



DESCRIPTION

Amphenol offers a highly skilled team of applications and design engineers capable of supporting full turn-key solutions from concept and design thru full product realization. Technical collaboration is backed by our full suite of design tools and modeling software, supported by platforms such as Cadence Allegro, Mentor Graphics Expedition, Polor electrical simulation, Solidworks, KeyCreator and Siemens NX amongst others.

FEATURES AND BENEFITS

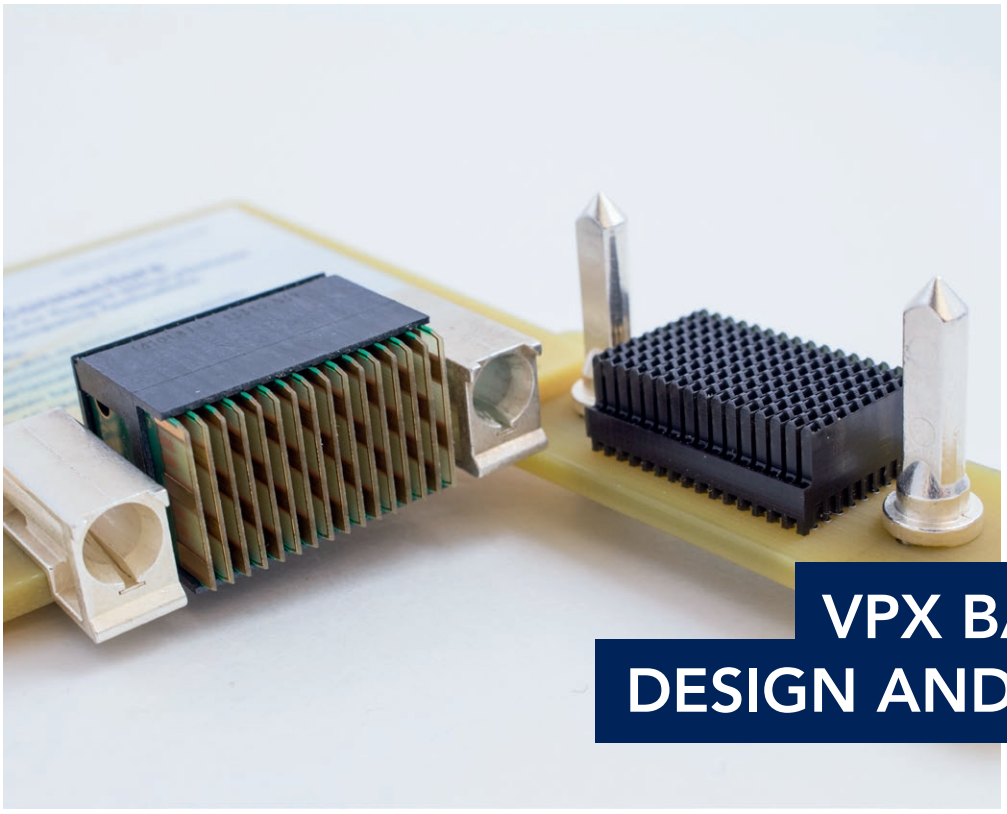
- Stackup & construction development.
- Impedance modeling and current requirement characterization.
- Signal integrity simulation and analysis.
- Full DFM analysis ensuring optimal producibility of new designs.
- Material evaluation and recommendations based on application needs.
- Non-functional and functional mockup development and build.
- All pwb types such as rigid, flex and rigid-flex are supported.
- USA or UK/EU manufacturing options.
- Quick Turn Capability from Prototype through to production.

DESCRIPTION

Amphenol is committed to providing VPX assemblies that are cost effective and meet customer requirements through the use of world class technologies, manufacturing processes, design engineering and customer service. Amphenol has many years of experience in designing custom VPX backplane for the mil-aero market utilizing latest design tools. We also have the assembly and test capabilities using commercially available VPX components and now also available with Amphenol's R-VPX components for signal, Rf and fiber optics.

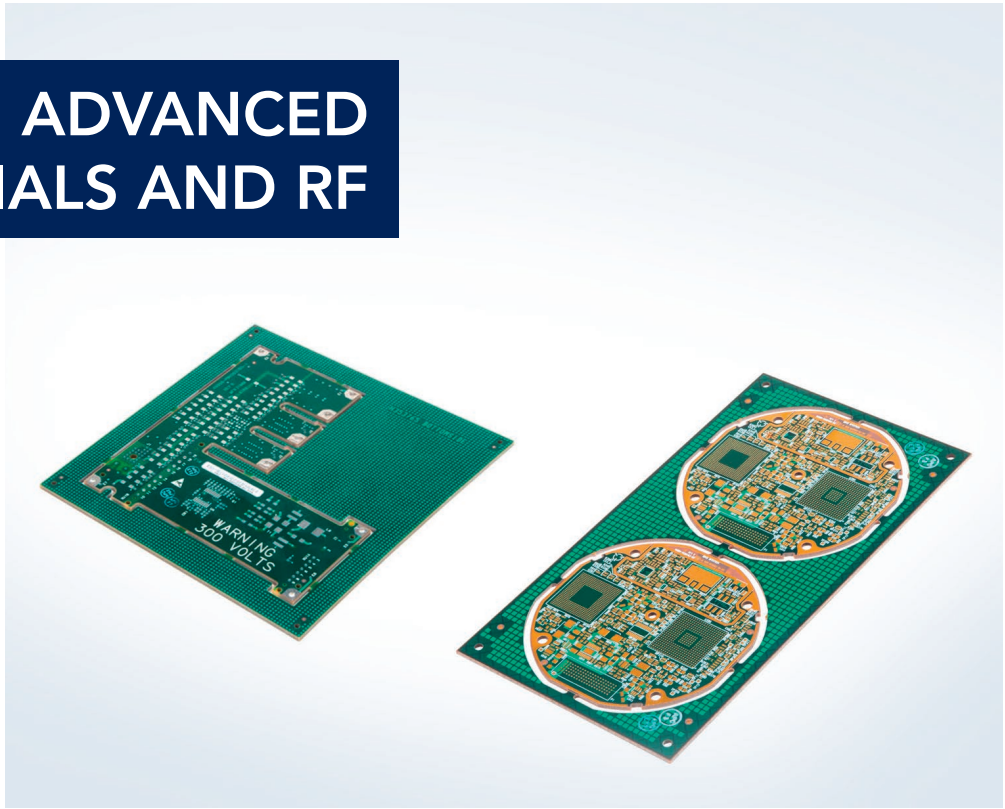
FEATURES AND BENEFITS

- Design capabilities from schematics to final product
- Amphenol's R-VPX components
- Amphenol's VIPER ruggedized VPX
- Center of excellence for assembly in Nogales
- Press-fit assembly
- Test capabilities
- SMT soldering
- Conformal coating application



VPX BACKPLANE: DESIGN AND ASSEMBLY

RIGID PWB: ADVANCED MATERIALS AND RF



DESCRIPTION

Signal speed and signal integrity in digital design are driving the demand for high performance laminates in the rigid board market. Performance requirements are reaching those previously considered to be exclusively reserved for RF (Radio Frequency) and Microwave applications. Dielectric Constant and Dissipation Factor are both being driven down to positively affect signal loss (attenuation). Resin, Glass Style and Copper Surface Roughness all contribute to the performance enhancement. Laminate manufacturers are competing in a global market for a share of this growing market segment.

Impedance is not the only measure of PWB performance; many designers are specifying Insertion Loss maximums to be measured as part of the total PWB performance characteristic.

FEATURES AND BENEFITS

- Proper laminate selection enables high speed routing up to 56GHz
- Lower Dk/Df laminates allow routing of wider traces on thinner dielectrics
- Lower Dk/Df laminates allow higher layer count without increasing overall thickness
- Lower Dk/Df laminates support lower impedance tolerances
- Lower Dk/Df materials also supporting sequential lamination and Hi-Temp assembly

DESCRIPTION

Amphenol's design, manufacturing, and test engineering team has a long history of developing and manufacturing power distribution systems for ground and avionics based power distribution systems. Specific areas of expertise include component selection, thermal management, busbar and interconnect design, high voltage testing, and fully-functional system test.

FEATURES AND BENEFITS

- Complete Design-to-spec capabilities
- Thermal Analysis
- Component and Power Controller selection and supplier management
- EMI/EMP Suppression device design
- Vertically integrated Manufacturing Capability
- In-house Functional and ESS Test Capabilities
- Test Software and Hardware Development

POWER DISTRIBUTION SYSTEMS

ELECTRO-MECHANICAL ASSEMBLIES

DESCRIPTION

Amphenol designs and manufactures ruggedized electro-mechanical chassis assemblies for a broad range of Military & Avionics platforms. Amphenol engages in both design-to-spec and built-to-print solutions. The experience of our engienering team along with vertically integrated manufacturing capabilities offers full turn-key support and quick-turn lead times.

FEATURES AND BENEFITS

- Vertical Integration: Cables, CCA, Machining, Integration and Test
- Liquid and Air Cooled Chassis
- Dedicated Program Management Support
- High-temperature, High-pressure, High-flexibility, High-frequency, EMI-RFI
- Thermal Analysis
- Environment Stress Screening: Temperature, Humidity, Vibration, Shock and Leak
- Innovate Cost Out: Design for Manufacturability / Complete BOM Evaluation
- Dedicated Program Management
- Obsolescence Management

DESCRIPTION

On modern aircrafts, avionics equipment takes up a great deal of space and weight, plus the need of upgradeability is becoming important. These matters are not resolved with a federated architecture that becomes more and more complex with advanced aircraft. A more modular, upgradeable and weight effective approach has been sought, through an integrated architecture.

Next generation embedded equipment will be interfacing with digital network, instead of being interconnected through analog and discrete signals only.

The Smart Bus Adaptor (SBA), allows the easily use of old generation equipment (or retrofits, upgrades) with the new Integrated architecture. Special adaptation bundle only is needed.

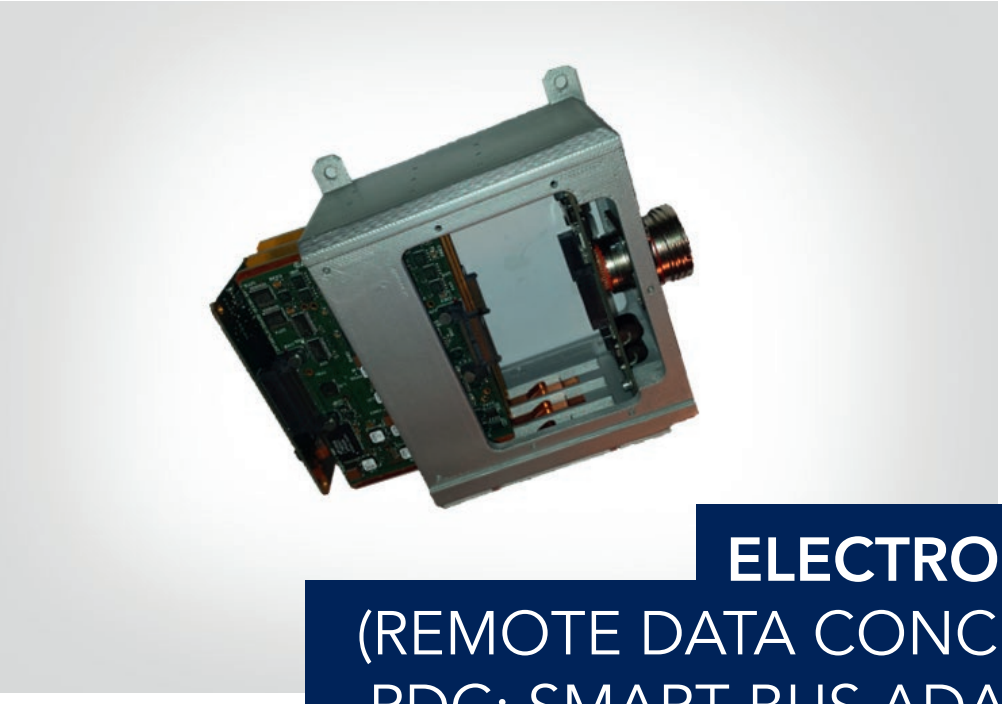
SBA collects discrete inputs, analog signals, and digital data from a plurality sensors, actuators and equipment throughout the aircraft, then converts them to digital format for streaming over the databus of aircraft-management system (ARINC429, ARINC825 (CAN bus)).

SBA is a technology demonstrator developed with a Technology Readiness Level (TRL) of 6, to match general RDC requirements.

Note: SBA is for Analog Equipment; RDC is for Analog & Digital Equipment

FEATURES AND BENEFITS

- ARINC 429, ARINC 825, ARINC 826 compliant
- ARINC 429 to ARINC 825 conversion / ARINC 825 to ARINC 429 conversion
- ARINC 429 speed network adaptation up to 100kbit/s
- ARINC 825 speed network adaptation up to 1 Mbit/s
- 14 discretes I/O configurable
- Analog to digital conversion (voltage, resistance, thermistance measurement), transmit to ARINC 429 or ARINC 825
- Arbitrary waveform generation output
- Interconnection electrical bundle with automatic identification
- Configurable with an intuitive HMI
- Using two HD38999 connectors to decrease overall size and increase the number of functions
- RDC targets compliance with DO254, DO178, and DO160 standards
- High Reliability
- Technology Readiness LEVEL (TRL): 6



ELECTRONIC BOXES (REMOTE DATA CONCENTRATOR: RDC; SMART BUS ADAPTOR: SBA)

SKUNK WORK

DESCRIPTION

A new, Fiber Optics version of our successful Luminus connector.

A mating of proven APCD Luminus 1/4 turn CAM lock and fiber contact technology, Fiber-Luminus is capable of holding up to 4 M29504 contacts in a shell size 8 housing, bringing low cost reliability to the world of fiber optic connectors. Available as in either the Luminus un-plate or Pegasus metal plated styles, Fiber-Luminus offers users a choice of price / performance options without sacrificing reliability or ease of use. Fiber-Luminus offers a lower cost option for applications where metal braided shielding is not required, while Fiber Pegasus adds the metal plate to provide continuous EMI coverage.

The tough polyetherimide shell housing provides resistance to temperature and harsh chemicals, while the integral wire sealing grommets help support the delicate fiber cable from excessive bending at point of entry. Simple "snap-on" strain relief brackets are available to further extend the point of relief.

FEATURES AND BENEFITS

- M29504, ARINC801 and Amphenol Socapex LUXBEAM contacts
- 1/4 turn cam lock
- Lightweight
- 500+ mating cycles
- Tool-less connect / disconnect
- Snap-on strain relief
- Interfacial & wire grommet sealing to IP67

FIBER LUMINUS

NANO-PEGASUS & NANO-LUMINUS

DESCRIPTION

A new, High Density version of our successful Luminus connector.

A mating of proven APCD Luminus 1/4 turn CAM lock and ALDEN contact technology, Nano-Luminus and Nano-Pegasus are capable of holding up to 11 contacts in a shell size 5 housing, bringing low cost reliability to the world of ultra-small connectors. Nano-Luminus is well suited for low head wall / side wall power distribution and control commercial aerospace applications, like airplane seat backs, tray tables, and arm rests, while Nano-Pegasus finds applications in military sub-system interconnects, such as missile guidance, surveillance control, and intersystem communications.

Military users love the small size, light weight, non-ITAR/COTS dimension; while Commercial users love the low cost, the ability to self-assemble the solder cup style, or flexibility to have assembled at a cable vendor of their choice. Both types of users appreciate the easy-to-use locking style and high reliability, as well as the low cost per pin.

FEATURES AND BENEFITS

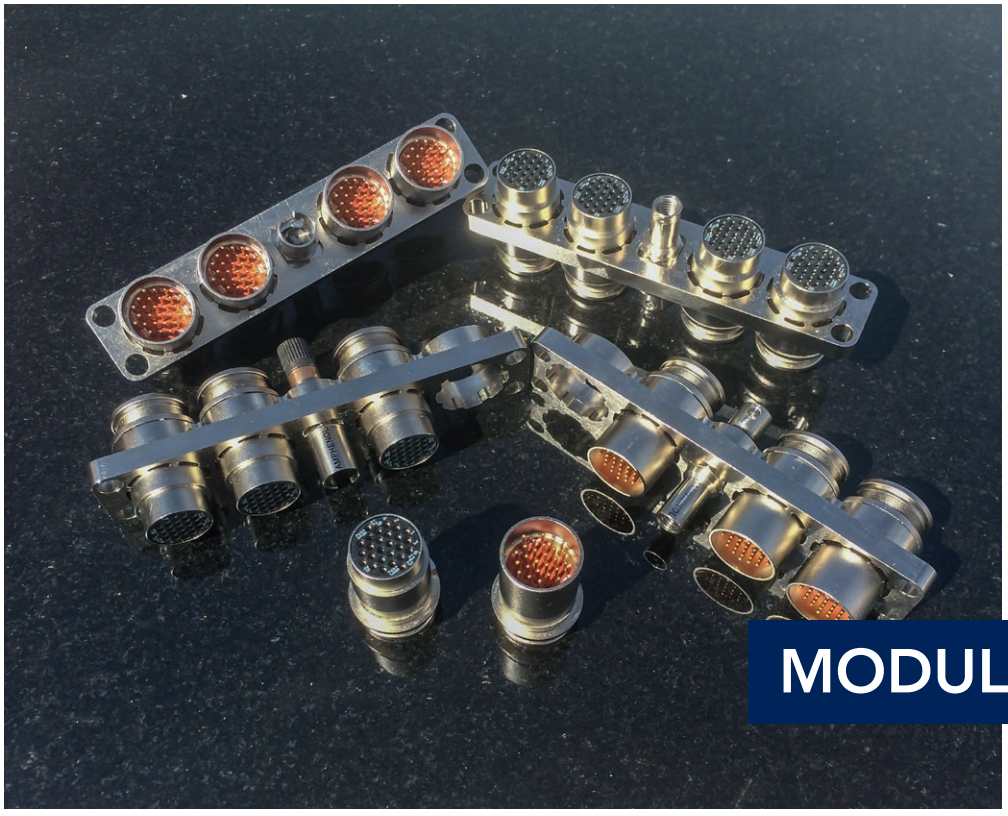
- Size 28 & size 30 wire awg supported
- 11 contacts in 0.325" circular connector
- 1/4 turn cam lock
- Lightweight
- Solder cup style for user friendly assembly
- 500+ mating cycles
- Tool-less connect / disconnect
- Wire grommet sealing to IP67

DESCRIPTION

The challenge of routing a multileg harness through lightening holes in an aircraft or around obstacles in a vehicle often necessitates some terminations be done on the factory floor. This takes tremendous time and resource allocation to accomplish what can normally be done in a harness shop for much lower costs. With the Amphenol Modular Hybrid, complete harness fabrication can be done in the shop and the installers simply snap in the modules after routing.

FEATURES AND BENEFITS

- Utilize existing circular inserts from 2M Product
- Cartridge design allows termination of EMI shielding and braids in wire shop
- Simple Snap in Installation of keyed cartridges into shell
- Utilization of industry standard EN4644 polarization, locking mechanism and panel cutout
- Pin and socket inserts in either plug or receptacle shell – mix and match
- Different shell sizes possible



MODULAR HYBRID

HERMETIC EPOXY SEALED CONNECTORS

DESCRIPTION

Description: Amphenol's new Epoxy Hermetic Connectors offer the performance of our glass-sealed hermetic connectors while reducing connector weight and cost. This product is currently being designed and tested to meet the harsh environments of D38999. The custom epoxy blend will allow the connectors to reach temperatures of -55c to +175c while maintaining a leak rate of 1x10-7. This revolutionary technology is ideal for applications that require superior sealing at the connector interface.

PERFORMANCE

- Standard Mil-spec AC voltage rating
- Leak rate of 1X10-7 cc He/sec or less
- Maintained after temp cycling, 100 cycles -55 to +175°C
- RoHS Compliant

CONNECTOR OPTIONS

- D38999 series I, II and III
- Aluminum Shell Material
- Electroless Nickel finish
- Custom Flanged Receptacles
- PC Board Mounting Stand-offs
- Thru-bulkhead Configurations
- Solder Cup Contacts
- Custom PCB contacts lengths with gold plate or Pre-Tin finishes

DESCRIPTION

A harsh environment interconnect system with superior electrical performance.

Dualok is an enhanced anti-decoupling mechanism that can be used on virtually any cylindrical plug connector and backshell.

The Dualok Interconnect System greatly improves electrical performance in harsh environments while providing a size and weight savings when compared to standard connectors in the same class.

Dualok technology is applied to the plug connector and backshell only and will mate with standard receptacles.

DUALOK TECHNOLOGY BENEFITS

Superior Electrical Performance:

- Better shell-to-shell conductivity
- Assures EMI protection at high frequencies
- Minimized contact fretting

Superior Harsh Environment Performance:

- Extreme vibration capabilities at wide temperature range
- Enhanced corrosion protection with composite materials
- Reduces relative motion

Size and Weight Savings:

- Lightweight, hybrid composite/ metal design
- Smaller footprint/space savings

DUALOK INTERCONNECT SYSTEM

THDM SERIES HIGH DENSITY TACTICAL CONNECTOR

DESCRIPTION

Amphenol Fiber Systems International (AFSI) has announced the latest addition to its high density product portfolio. The THDM is a MIL-PRF-28876 derived mechanical transfer (MT) rugged fiber optic connector for military and aerospace applications. THDM is modular which allows multiple combination of fiber interfaces within the same connector. The THDM connectors are available in 2, 4 and 8 MT configurations, can support 24 to 192 fiber channels using industry standard MT ferrules. The connector features either a 28876 or a 38999 style strain relief provision for most the suitable solutions Sub-micron machining and measuring equipment is in the Amphenol Fiber Systems International (AFSI) facility for the manufacturing of this new connector series.

FEATURES AND BENEFITS

- Ultra-high density fiber optic connectivity solution
- Removable termini facilitate maintenance and repair
- SM, MM, and APC ferrules available
- Expanded beam terminus in development (available mid-2016)
- Multiple plating and material options available

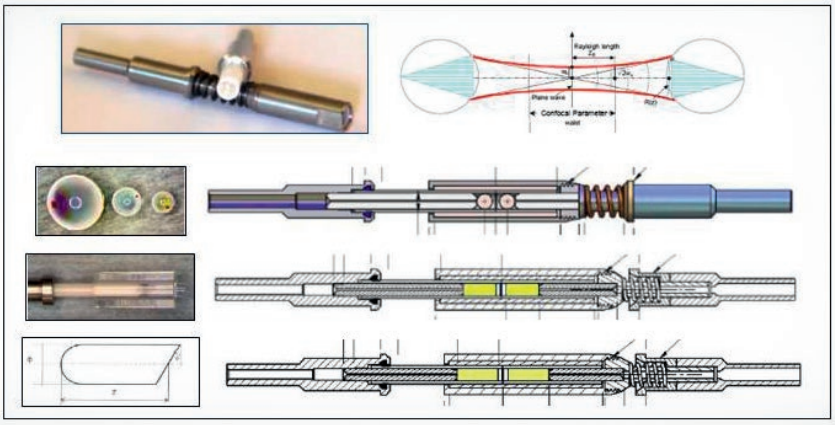
DESCRIPTION

Expanded beam fiber optic termini are designed to facilitate the insertion of expanded beam fiber optic technologies into standard connector formats such as D38999 or ARINC801. Expanded beam termini provide increased resistance to dust and debris in harsh environment use.

AFSI is developing a suite of expanded beam terminus designs for D38999, ARINC801, M64266, and other common connector platforms. Single-mode and multi-mode termini will be available. Unlike competitors, we will have a variety of lens options to suit specific needs (low insertion loss, high return loss, etc.). Tested parts expected available Q2 2016.

FEATURES AND BENEFITS

- • Less susceptible to dirt and debris than standard physical contact termini
- Functional with standard connectors
- Multiple lens options to be avaialble
- Single-mode and multi-mode available



EXPANDED BEAM FIBER OPTIC TERMINI

7 PIN BREAKAWAY WATERPROOF CONNECTOR WITH OPTICAL CONNECTOR

DESCRIPTION

With the continued demands of offering an audio connector that also allows the user to transfer data at a high speed, NEXUS, is in the process of developing a connector that does just that. The connector design will offer a standard 7 Pin Breakaway connector with an eighth Fiber Optic Connection.

FEATURES AND BENEFITS

- Backward compatible to 7 Contact Version
- Water/Dust Resistant
- Quick Disconnect
- Blind Mating
- Capable of being Overmolded

DESCRIPTION

The Luminus Series are lightweight, cost-effective connectors that are highly reliable and simple to use. With multiple configurations and arrangements available, a solution can be tailored to suite your application's exact requirements.

A fiber optic version is now available to bring the well-known benefits of Luminus to the world of optical connectivity! Ideal where space is limited, these innovative, "scoop-proof" connectors feature a locking mechanism that ensures stability, are suitable for blind-mating, and are RoHS compliant.

FEATURES AND BENEFITS

- IP67 Sealed
- Very low weight compared to metal connectors
- Low cost precision molded parts provide aerospace level performance with a commercial price tag
- Rugged polyamide housing provides 500 cycle mating durability

LUMINUS LITE: ULTRA LIGHT WEIGHT, LOW COST FIBER CONNECTIVITY SOLUTION

IGUANA: MIL-DTL-38999 STYLE CONNECTORS WITH AN IP68 BARRIER SEALED INTERFACE

DESCRIPTION

The Iguana series of PCB mounting connectors from Amphenol Ltd combines the traditional benefits of series III Mil-DTL-38999 with the in-shell moulding technology required to achieve a low profile and unique multi-sealed solution.

Iguana provides an effective barrier against ingress of moisture and dust even in the unmated condition hence offering an excellent alternative to higher cost fully hermetic connectors or the unreliability of back-potting. Compatible and intermateable with standard series III Mil-DTL-38999 product, Iguana offers the perfect solution for the ground system market where IP68 levels of sealing are required.

FEATURES AND BENEFITS

- IP68 sealed against ingress of dust and moisture in the mated and unmated condition
- Standard Mil-DTL-38999 interface; intermateable and interchangeable with existing product
- Fully pre-loaded with PCB contacts, saves time in assembly and ensues correct alignment
- Low profile jam nut connector reduces penetration into the box and reduces weight
- Integrated moulded stand-offs to allow PCB soldering inspection and cleaning
- Optional grounding posts for superior EMI shielding
- Suitable for NBC washdown
- RoHS compliant and available in Black Zinc Nickel as well as other mil-spec finishes.

DESCRIPTION

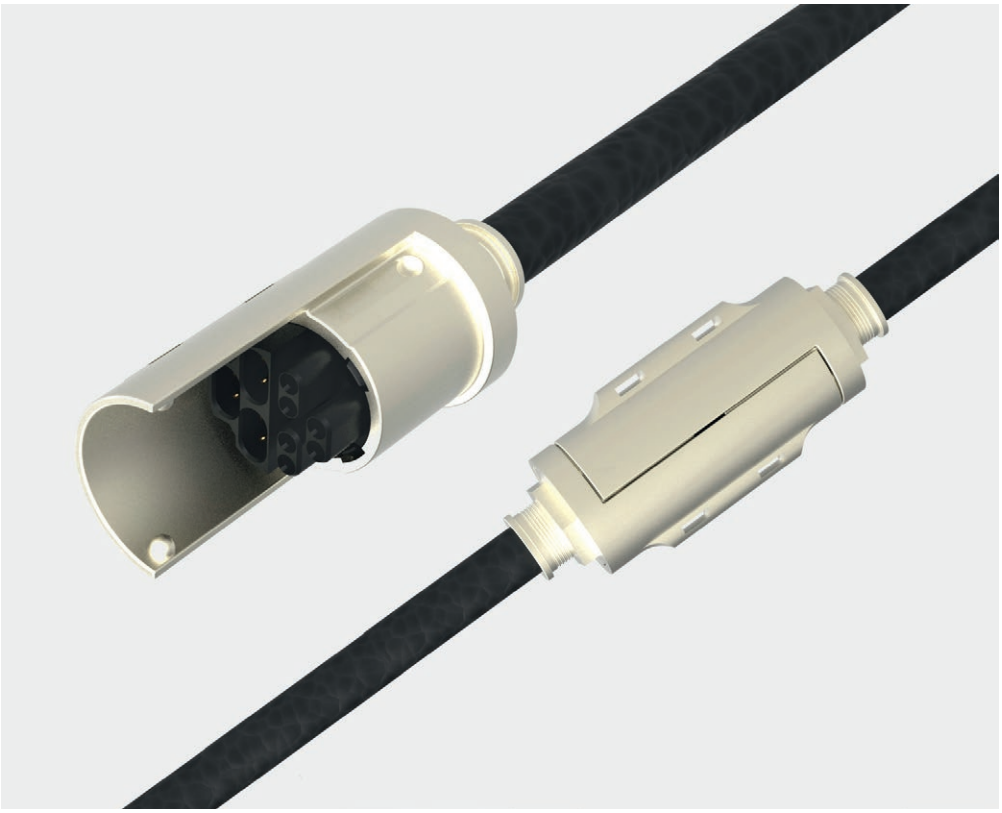
Many customers prefer a sprung contact rather than traditional pin and socket arrangement due to the ease of wipe clean maintenance and eliminating the risk of bent/broken pin contacts. Amphenol Ltd have developed a patented technology in order to offer high density miniature connectors with this sprung-contact interface. The Grasshopper series benefits from the same pedigree of environmental performance demonstrated by Terrapin and appreciated by customers around the world.

FEATURES AND BENEFITS

- Plug connectors with pad contacts for easy wipe-clean maintenance
- IP68 sealing in mated and unmated conditions
- Up to 37 x 24AWG contacts in the same popular arrangements as Terrapin
- Robust Brass or lightweight Aluminium shell options
- 2000+ mating cycles and up to 1000hrs salt spray endurance
- Suitable for overmoulding with a low cost integral backshell solution
- Designed for harsh environment communications equipments
- RoHS compliant, Cadmium free and ITAR free

GRASSHOPPER: MINIATURE CONNECTOR WITH SPRUNG CONTACTS

CSC



DESCRIPTION

Amphenol's CSC™ was inspired by the need to replace COTS USB and RJ45 in-line connections with an aerospace qualified solution. Applications in today's Aerospace Cabin Systems demand affordable interconnects with a highly reliable, lightweight and small form factor design. Amphenol's innovative Cabin Systems Connector (CSC™) has been developed to not only meet these industry expectations but to revolutionize the ease of cable assembly and installation.

CSC utilizes Amphenol's proprietary brush contacts in this hermaphroditic connector that provides excellent electrical performance with a quick mate and unmate capability.

FEATURES AND BENEFITS

- 2.5 milliohm shell to shell conductivity
- 500 mating cycles
- Crimp brush contacts
- Hermaphroditic – one part number for plug / receptacle
- Low Cost
- 12 pins at 3 amps per contacts
- Compatible for USB 2.0 and 100Base-T high speed protocols

DESCRIPTION

- Stainless steel connector delivered with sealing plug, spacer and sealing boot
- Based on MIL-C-5015
- Arrangement 24-10 (7 contacts size 8)

FEATURES AND BENEFITS

- Anti-decoupling device
- Full teeth accessories (10kA lightning strike)
- FST compliant (Fire Smoke and Toxicity) with ABD0031 standard
- Temperature range: -55° to +200°
- Delivered with appropriate accessories (sealing plug, spacer and sealing boot)

ABS2286 CONNECTORS

SOLARIS & POLARIS

DESCRIPTION

Solaris is a small, plastic, easy to use rectangular connector designed specifically for low and medium power applications. Polaris is the plated version with a nickel/copper plate that provides up to 60db of noise isolation. The spring-loaded slide lock mechanism is a snap to use – simply push to lock, and slide to unlock. The slide lock eliminates FOD, as would be typically found in screw mount D-Subs. A built in cable tie access hole provides a "zero footprint" method to secure the connector to a bulkhead, cable bundle or other tie down points.

High grade polyethermide plastic construction means high mating cycles, making Solaris and Polaris suitable for man/machine interfaces. When exposed the real world, IP67 sealing is guaranteed by the interfacial seal and wire seal grommets, meaning your application is free from dust, moisture and corrosion. Ultrasonically welded components provide void free joints, sealing out humidity, meaning long lasting, crack free operations over full operating temperature. Finally, each housing has raised finger ridges, as well as a retaining lip that allows tying off protective sheathing and braids without needing to add backshells or saddle clamps.

FEATURES AND BENEFITS

- Lightweight
- EMI shielded with 100 micro inch copper, 200 micro inch nickel (Polaris only)
- Approx. 0.325" x 0.625" x 1.5" (mated)
- 500+ mating cycles
- Integral boot attach features
- "Zero footprint" attach
- Tool-less connect / disconnect
- Interfacial & wire grommet sealing to IP67

DESCRIPTION

Compact Blind mate modular interconnect offers infinite possibilites with proven ARINC 600 design.

FEATURES AND BENEFITS

- Customer specfic designs including RF, Fiber Optic and low insertion contacts
- Modular removable inserts effective for separating signal and power contacts
- 360 degree EMI spring option for superior shielding effectiveness
- Mates to standard ARINC 600

MULTI MODULAR ARINC

OVER-VOLTAGE PROTECTION VIA DIODES

DESCRIPTION

Connectors that meet customers' needs for addition of diode technology for LEMP and NEMP. Can be offered in any shell type.

FEATURES AND BENEFITS

- Solderless, removable diodes provide protection against lightning strike or EMP pulse – crucial for composite aircraft, which will not shield controllers from the environment.
- Reduces customer design time and PCB costs while adding value to the connectors.
- Increases end product reliability by moving diodes off PCB's to the connector, located closer to ground.
- Fully customizable.

DESCRIPTION

AlumaLight is the latest innovation in Amphenol's Backshell product family. This product is ideally suited for Commercial Aerospace applications with its unmatched combination of weight, performance, and price. As with composite, AlumaLight has approximately 50% weight savings over standard product and are priced similarly but that is where the similarities end.

AlumaLight's superior EMI shielding is standard for the entire product family. When ordering composite, if EMI/RFI shielding is required, the product must be sent for a separate coating process, which adds to lead time and increases the cost of composite products.

AlumaLight is more durable that composite and has a higher shear strength, which means no breakage of the coupling nuts. AlumaLight comes in three different product families – Environmental, Strain Relief/EMI RFI, and Band Lock/EMI RFI.

FEATURES AND BENEFITS

- An Industry first
- More durable vs composites
- Enhanced EMI performance
- Strength & Durability
- Reliability & Lightweight

ALUMALIGHT

ENGINE BACKSHELLS

DESCRIPTION

Amphenol's Backshells are qualified to AS85049 and provide strain relief, environmental sealing and EMI/RFI shielding. Also RoHS compliant, they are available in aluminum, stainless steel, brass, and composite—and come in various finishes. Different designs (i.e. straight, 45°, and 90°) are available and customization is always an option. In addition, by using the Electronic Beam Welding process, they now meet Aerospace Defense Security (ADS) standards ESC75 /76, and /77.

FEATURES AND BENEFITS

- Qualified to ADS Product Standard ESC 75, 76, 77
- Three product types: straight, 90°, 45°
- 10 shell sizes to choose from
- RFI/EMI Cone Grounding
- 100% Anti-Decoupling

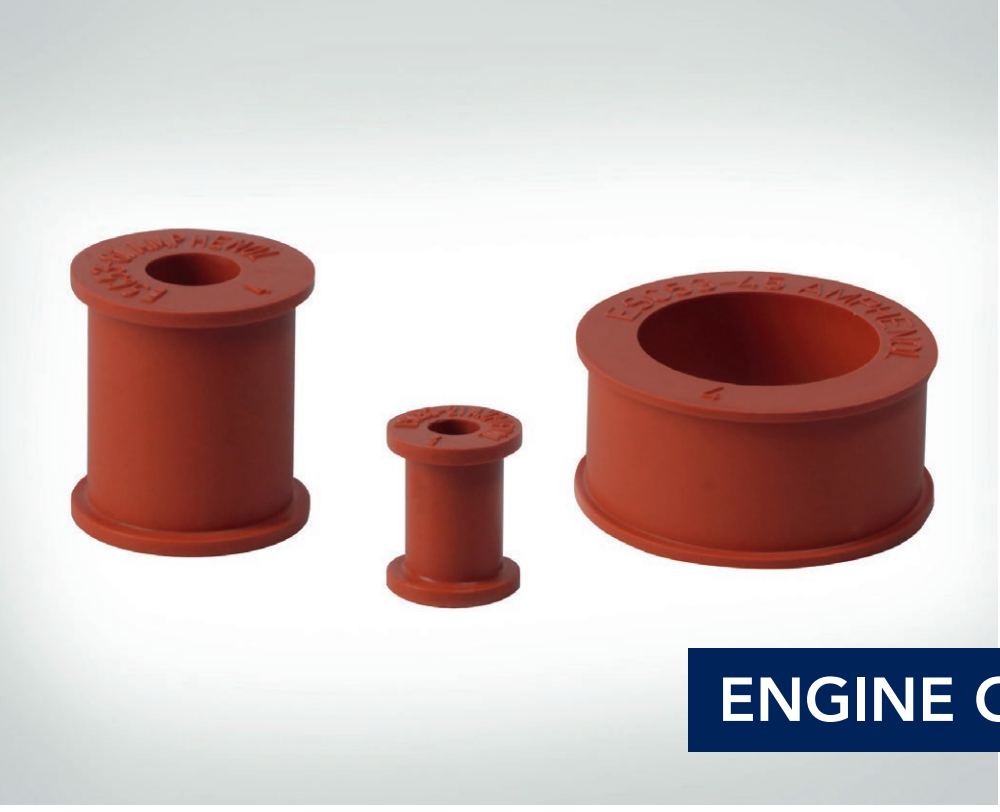
DESCRIPTION

A bushing is a type of vibration isolator. It provides an interface between two parts, damping the energy transmitted through the bushing.

Amphenol's High Temperature Electrical Bushings, made from a silicone compound, are qualified to ESC 53 Aerospace Defense Security Space (ADS) standards. They have a temperature range of - 20° C to + 260° C (- 4° F to 500° F) – and although there are over 70 part numbers to choose from, customized product is always an option.

FEATURES AND BENEFITS

- Approved to ESC 53 Aero Defense Security Space (ADS) standards
- Able to withstand high temperatures: aerospace engines
- Multiple sizes to choose from; Customization



ENGINE GROMMETS

SNAPPING CLAMPS

DESCRIPTION

Amphenol's Snapping Clamp is one of the latest technologies from our System Attachment product line. The product consists of two pieces – a mounting piece that attaches to the structure of the vehicle and another grommet that is placed in the mounting piece. The grommet, designed to hold cables or wires, comes in two different sizes and colors.

FEATURES AND BENEFITS

- Two different types: screw-on mount and bonded (2-way tape) mount
- Color coded grommet to distinguish size
- "U-Snap" design – secures the grommet, thus cables, quickly and easily
- Small footprint & Lightweight
- Clear markings to distinguish size
- Four different sizes; custom product sizes are optional

DESCRIPTION

- Metallic frontshell for RJFTV/ USBFTV/38999 series receptacles
- Self closing cap
- 2 sizes available: size 15 & 19

FEATURES AND BENEFITS

- Sizes 9 to 25 available in Q3 2016
- IP 67
- Protection against Dust & Water spray
- Self closing after disconnect

TV SNAP CAP

PT SNAP CAP

DESCRIPTION

- Plastic frontshell for PT / 451 receptacles
- Self closing cap
  6 sizes available: to size 8 from size 18

FEATURES AND BENEFITS

- Size 14 & 16 new sizes, launching in 2016
- IP 54
- Protection against Dust & Water spray
- Self closing after disconnect

DESCRIPTION

- Cap available for receptacles
- Size 11-12 with different ending possibilities
- The same cap available for 38999 series and PT /451 series

FEATURES AND BENEFITS

- 6 sizes: 9/10, 11/12, 13/14, 15/16, 17/18, 19/20: available for the begining of the year
- Size N for PT / SJT / JT
- Size N-1 for TV / LJT
- IP 68
- Material: Silicone 200°C

RUBBER CAP

PINLESS CONNECTOR (WIPES)

DESCRIPTION

Amphenol can offer a unique pinless connector system for both power and data transfer. The system has no mating contacts and requires no physical contact between the sub assemblies; consequently the device is tolerant of both misalignment and rotation and has zero insertion force. Contact wear is eliminated and the device is intrinsically protected from sparking. Non conductive barriers can be placed between the subassemblies.

Power transfer up to 5watts can be achieved, together with data rates of 10 or 100 kbps depending on model.

Amphenol can conduct product or programme specific qualification and acceptance activities to support customer development lifecycles.

FEATURES AND BENEFITS

- Power and/or data transfer
- No mechanical contacts
- Tolerant of misalignment, rotation, separation distance
- Zero insertion force, no contact wear
- Wipe clean
- Up to 5w power
- Up to 10 or 100 kbps

Edition 05/2016

Amphenol

WE ARE YOUR SPECIAL FORCE

Amphenol-Air LB GmbH | Am Kleinbahnhof 4 | 66740 Saarlouis | www.amphenol-airlb.de