

Amphenol Air LB

Your Satisfaction. Everyday. Everywhere.

Company presentation 



Connectors & Attachment systems

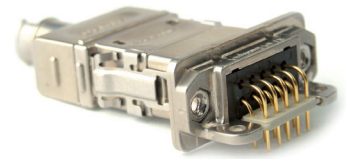


OUR PRODUCTS

Part of Amphenol Corporation group of companies, Amphenol Air LB is a **world leading manufacturer** of high performance standard and custom interconnect solutions and accessories for wiring & fixing.

RECTANGULAR & MODULAR CONNECTORS

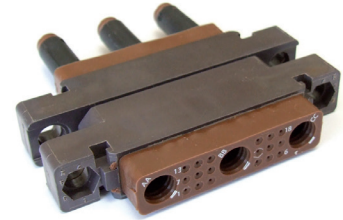
- 3559 Push Pull
- SIM series II / EN4165
- ASR
- Monomodule SIM / EN4165
- 1900 series / EN3545
- 1977 series
- Mounting plate
- ...



ASR Miniature Snap Connector

CIRCULAR & INDUSTRIAL CONNECTERS

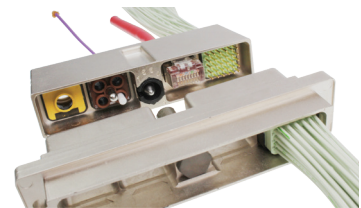
- 2332 connector
- 544 composite connector
- ...



1900 connector (EN3545)

QUICK JUNCTION MODULES

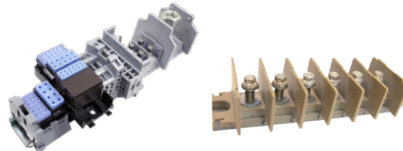
- Module 1100 series
- Module 1750 series
- Module 1767 PA series
- Module 1777 series
- ...



SIM modular (EN4165)

TERMINAL BLOCKS & ASSEMBLIES

- Terminal junction block
- A.R.C. Terminal junction block -60°C
- Monobloc assembly 3240 series
- ...



Module 1750 series

RELAY SOCKETS

- NFC
- ASNE
- ...



Cable clamps

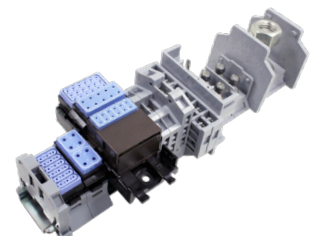
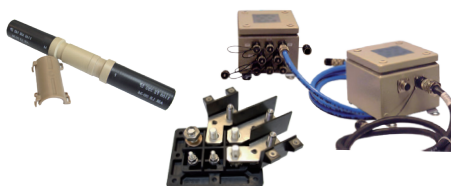
FIXING ACCESSORIES

- Cable clamp
- Pipe clamp
- ...



SPECIAL PRODUCTS

- SMED Value Box®
- Docking plug
- Splice for nuclear environment
- ...



Amphenol Rail Compound terminal junction block

OUR MARKETS



AEROSPACE

- Commercial and civil airframe
- Commercial avionics
- Cabin service systems, seats and interiors fitting for commercial aircrafts and business jets
- Engines and nacelles
- Space



Supplier of the year 2015 award
from Airbus Electronics



DEFENCE

- Military airframe
- Military avionics
- C4ISR
- Naval systems
- Battlefield communication systems
- Ground vehicles



RAIL & MASS TRANSIT

- Rolling stock**
Doors actuation control units, air conditioning, power generation, lighting, interiors fittings, etc.
- Ground / Signal**
Direction and information panels, signalling and monitoring units, video surveillance, etc.



INDUSTRY

- Machines tools and robotics
- Instrumentation
- Automotive
- Automatism
- Measures



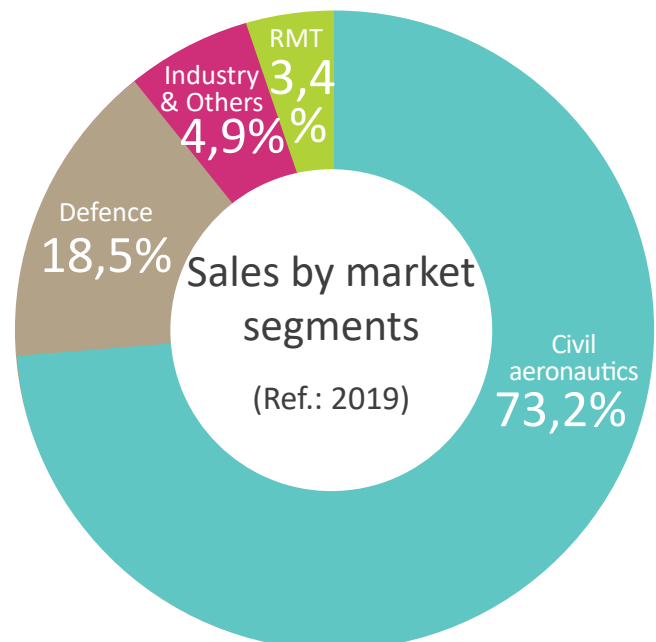
POWER GENERATION

- Nuclear power plants
- Fossil fuel thermal plants
- Wind turbines



MEDICAL

- Catheters
- Laboratory equipments
- Scanning / Imaging
- Healthcare units
- Monitoring units



OUR CHALLENGE : Mastering processes

QUALITY POLICY

Means

Amphenol Air LB implemented various processes aiming at **Operational Excellence and Customer Satisfaction**



Results

Amphenol Air LB is now certified for rigorous, transparent and effective results obtained



LOGISTICS POLICY

Means

Amphenol Air LB makes everyday use of a panel of controls, analysis and processes targeting **Logistics Excellence**

- **Daily analysis of backlog** with internal commitment of achievement
- **Daily analysis of missings** to act immediately and ensure deliveries at requested date
- **E.R.P. : Weekly analysis** taking into consideration customer's supply plans
- ...

Results

Amphenol Air LB takes pride of the most significant award given by its customers



Classification AIRBUS

for our overall on time delivery of **99,6% for more than 12 months**



Classification CLIENTS

for our rate on requested date delivery of **97% these last years**

DESIGN & DEVELOPMENT CENTRE

To address requirements and specifications issued by its customers, Amphenol Air LB has a very strong and dedicated team of Design, Development and Methods engineers capable of putting together unique and innovative combinations of products and technologies



INTEGRATED PRODUCTION CAPABILITIES

Amphenol Air LB has a large number of manufacturing equipments from the latest generation for an optimum mastering of manufacturing processes and can also rely on the global network of Amphenol production sites (over 5 continents including low production cost and dollar zones)

- **Engineering** : R&D and Methods
- **Prototyping** : Machining and Assembly
- **Production - Injection** : Molding and Overmolding
- **Production - Assembly** : Ultrasonic welding, Plasma treatment, Laser marking, Potting, Stamp marking, etc.
- **Laboratory** : Electrical and mechanical testings, Climate chamber, etc.



OUR EXPERTISE : Mastering technologies

BONDING VS OVERMOLDING

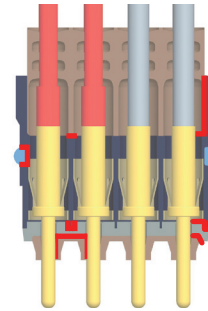
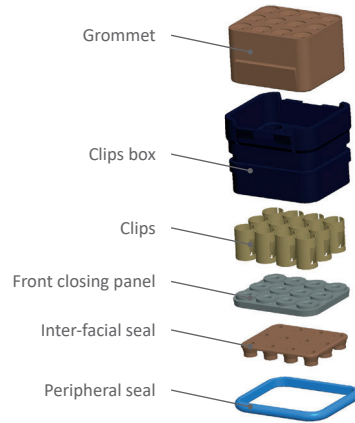
Comparison of 2 generations of SIM series as an example

- Traditional concept requiring multiple operations of assembly
- Each step is a different process
(plasma, primary, gluing, bonding, curing)
= Multiple causes for potential problems

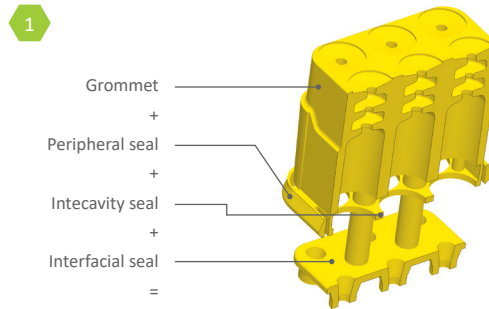
**Traditional
gluing method**
and associated
factors of risks

Humidity ingress

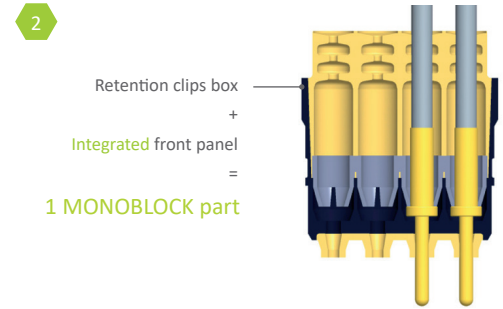
Arcing



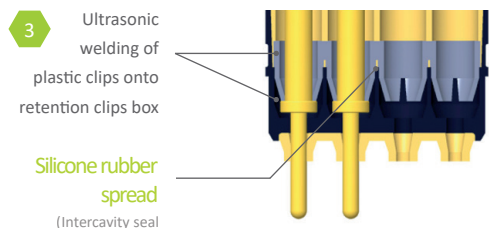
- Molding problems
- Polishing problems
- Plasma problems
- Primary problems
- Gluing problems
- (Migration of glue into cavities under pressure during process may lead to cavities partially filled)
- Polymerisation of gluing
- Risk of humidity ingress leading to arcing



1 overmolded element
in 1 single operation



1 MONOBLOCK part



Silicone rubber
spread
(Intercavity seal)

1 overmolded element
+
1 monoblock element
+
Plastic clips

END RESULT :
Optimized design for second to none
performances



Key features

- Full control of processes
- Simplified manufacturing processes

- 1 monobloc element

- 1 overmolded process
 - No weak point
 - No layers of glue
 - No creepage
 - No added-after peripheral seal

- Silicon rubber spread

- Use of sealing plugs optional

Second to none performances

- Most of risks associated to production such as molding, polishing, plasma, primary, gluing, compression and curing become non existent

- No risk of disbonding under mechanical stress
- Possible cavity fill during gluing process becomes irrelevant

- No risk of cavity humidity ingress
- No risk of arcing
- Optimum sealing of module inside connector shell
- Peripheral seal overmolded from inside/out : up to 75 cycles guaranteed

- No sealing problem between cavities : no creepage
- "Full material" overall performances : 1 shot overmolding
- Improved dielectric performances : 2 to 3 times superior to current standards

- Time saving during cable harness wiring
- Cost saving
- Quick implementation

OTHER INNOVATIVE DESIGNS

THE PA TECHNOLOGY

■ 1767 PA module

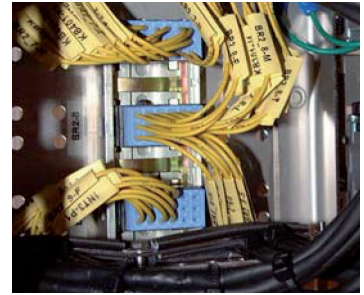
The best of our technology into a **cost effective solution** designed for **demanding environments** (shock, vibrations, ...)



1767 PA module



Positive and secured locking of contacts !



MINIATURISATION

■ High density SIM module

■ 1750 module

Highest contact density within a **very compact size** !



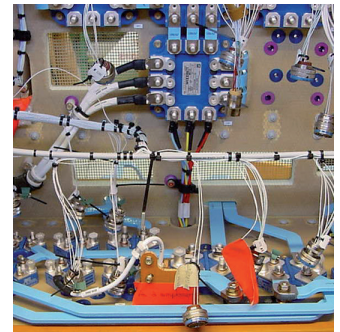
1750 module



HD SIM module



30 contacts size 23 !



THE A.R.C MATERIAL -60°C

■ A.R.C. Terminal blocks

■ Stud type terminal block (BJT)

■ Fast-on type terminal block (BJL)

■ Accessories

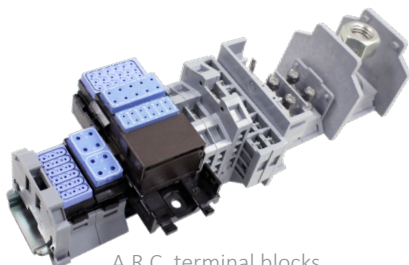
Meet the new **EN45545** standard but also exceed the specific requirements of **national standards**



by 2 majors **national operators** and 1 major **train builder**



Conform to the following RMT standards :
EN45545-2-april 2013 R22 HL3
DIN5510 Cat. S3
NFF16-101/102 Cat. A1 I2 F2 Ex.3
EN60695-11-10:UL94V0
NFPA130
!



A.R.C. terminal blocks

MASTERING THE DIECAST TECHNOLOGY

■ SIM Diecast backshell



Performances guaranteed at lower cost !



Metallic molded rear accessory



OUR ADDED VALUE

*Electrical connection ensured upstream and downstream of the interconnect solution
(Examples of Amphenol Air LB systems)*

ATTACHMENT SYSTEMS

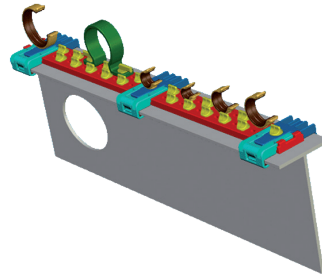
- Optimum performances on **composite or aluminum structure**
- **Modular System** based on individual standard block to be used as on or as a combination onto a fixing rail
- Components available **with elastomer cushions to optimize grip and alignment as well as reducing noise and vibrations**

Customer challenge

Attach and secure cable bundles or hydraulic conduits to the structure without riveting or drilling the support

Amphenol Air LB solution

Create a modular snap-on reliable attachment system using shape details of the structure to provide fixing points



PRESSURE SEALED FEEDTHRU POWER INTERCONNECT BASED ON BUS BARS FOR DOCKING PLUGS

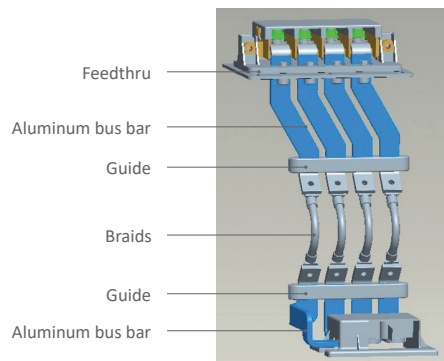
- **Feedthru** :
 - provides **sealing between pressurized and non pressurized zone** of the cockpit
 - Allows a **2 axis adjustment** capability versus docking plug parc fixed to the fuselage
- **Aluminum bus bars** : provide **power transmission** through the panel
- **Braids** : Provide a 3 axis adjustment of **movement during flight**

Customer challenge

Being able to interconnect the ground power unit (located out of the aircraft) to the aircraft generator located inside the cockpit

Amphenol Air LB solution

An original design of power transmission in harsh environment based on a unique combination of terminal blocks, bus bars and braided wires



THE SMED VALUE BOX®

- **Minimize down time** of machines and tools by **standardization of the connections** according to SMED* principals
- **Make interconnects more reliable** by eliminating problems related to use of PCBs in harsh environment (cold solder, low resistance to shocks and vibrations...)

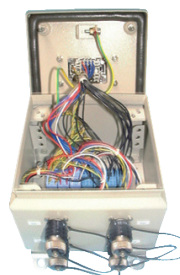
* SMED : organisation method aiming to reduce down time in a manufacturing process, born in the 1970s at Toyota under Shigeo Shingo initiative

Customer challenge

Optimize productivity by minimizing down times related to installation or changes of tools on machines and robotics equipments,...

Amphenol Air LB solution

Maximizing use of production capabilities by interconnecting all types of machines and peripherals with a standard interface



TERMINAL BLOCKS ASSEMBLIES

- Cage clamp type terminal block : **BJC**
- Stud type terminal block : **BJT**
- Fast on type terminal block : **BJL**

Customer challenge

To address different requirements and configurations using multiple types of standardized terminal blocks to be assembled on a rail

Amphenol Air LB solution

Provide multiple customized configurations of complete assemblies for rolling stock applications and for large range of cable sizes

Amphenol Air LB

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TECHNICAL SUPPORT:

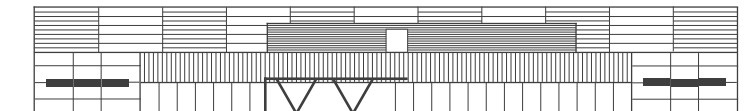
Tel. : +33 (0)3 24 22 78 63

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www.amphenolmao.com

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