TT Electronics

Product Range Overview

Connectors

AB Connectors Limited

Company Profile

TT Electronics' brand AB Connectors specialises in the design, test and manufacture of high performance electronic connectors and interconnect solutions, supplying a range of global customers in aerospace, defence, rail and industrial markets.

Our broad product portfolio which includes miniature connectors, high power connectors, soldier systems, harness assemblies and box systems typically serve within key applications such as signalling, communication and power distribution.



Operating from the principle site in Abercynon, South Wales, our research and development teams have an excellent track record for developing innovative industry solutions and our engineers have extensive experience in designing a range of product configurations to meet customer specific requirements for the most demanding environments.

From plant layout to production line set-up and quick changeover processes, we offer the ideal service, with a flexible manufacturing environment and accredited facilities.

Quality systems and approvals include ISO9001 along with various product and market sector approvals including the military Mil-std 790 and mass transit IRIS certifications and environmental approval to ISO14001. As a result of these qualifications AB Connectors has been awarded several major customer approvals and accreditations.

AB Connectors total commitment to providing customers with high levels of service, cost effectiveness, quality and innovative solutions in interconnection products make it the ideal first choice supply partner.

Content

mag-Net®

Auto-aligning and one handed blind mating connector

For wearable electronic systems in harsh environments that require invisible power and data connectivity, **mag-Net®** is a ground-breaking auto-aligning, self-coupling, self-locking connector solution that provides incredible ease-of-use and reliability.

Unlike circular barrel connectors, **mag-Net®** is a robust, flush-flat rectangular solution with a self-aligning, automatic magnetic latching system, enabling the easiest one-handed blind mating.

mag-Net® has been specifically designed for, but not limited to garment mounting; to protective vests or load carriage systems.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy, Non reflective, black Electroless Nickel (RoHS compliant).
Insulators:	Thermoplastic
Contacts:	Gold over copper alloy.
MECHANICAL FEATURES	
Contact type:	P.C. tails
Contact arrangement:	8 contacts
Temperature Rating:	-30°C to +80°C.
ELECTRICAL DATA	
Maximum contact Current Rating:	8 amps.
Dielectrics withstand voltage:	500V.
Contact Resistance:	<15 milliohms
USB2.0 compatible	Yes

MIL-PP

Ultra lightweight push-pull connector (Industrial, Aerospace and Defence)

Ultra-light weight, compact construction, high density push-pull connector family. Extremely robust for the most challenging field conditions; water tight, excellent EMC properties, and non-reflective finish, make it ideal for all soldier-borne and man-portable defence applications such as:

- Headsets
- Radio communications
- Head up displays
- PDAs
- Targeting systems
- Range finders
- Helmet systems
- Battery systems

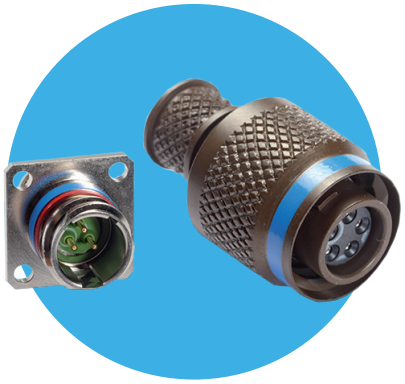
Specification

STANDARD MATERIALS & FINISHES	
Shells:	Aluminium Alloy (Aerospace grade), Non reflective, black Electroless Nickel (RoHS compliant).
Insulators:	Rigid Polymer
Contacts:	Gold over copper alloy.
MECHANICAL FEATURES	
Contact type:	Solder or P.C. tails
Contact Arrangements:	5 to 30 contacts
Temperature Rating:	-55°C to +125°C.
ELECTRICAL DATA	
Current rating:	3 amps @ 40°C
Contact resistance:	<5 milliohms
Shell to shell continuity:	<5 milliohms

Product Range Overview

MABAC

Micro (ABAC) Connector Range (Aerospace and Defence)



The **MABAC** series is a complete range of miniature products with a MIL-DTL-38999 design in order to be compliant with the harshest specification (Vibration, operating temperature, durability, corrosion resistance and EMI shielding).

A compact solution

- The smallest connector available (shell size 3)
- Miniaturization of MIL-DTL-38999 Series I
- Quick bayonet locking
- Integrated backshell
- Easy to wire and handle
- Compatible with heat shrink boot and braid retention band
- Compliant with overmolding

Specification

STANDARD MATERIALS & FINISHES	
Shells:	Aluminum alloy, passivated stainless steel (for size 5 & 7) with aluminium plating offerings of Zinc nickel (RoHS), Nickel (RoHS), Olive drab cadmium.
Insulators:	Thermoplastic
Contact body:	Copper alloy
Contact plating:	Gold over nickel plated

MECHANICAL FEATURES	
Contact type:	Crimp and P.C. tails
Contact arrangement:	2 to 9 contacts
Temperature Rating:	-55°C to +175°C

ELECTRICAL DATA	
Current rating:	3-5 amps
Contact resistance size 22D:	<14.6mΩ
Shell to shell continuity:	250mΩ

ABAC D38999

Series III (Traction, Industrial, Aerospace and Defence)

The **ABAC** range of connector are designed around the MIL-DTL-38999 Series III range of connectors and are designed to meet the most stringent requirements of the Military and Aerospace industries.

The rugged design of these connectors offers a high performance when subjected to vibration, shock and EMI/RFI environments.

This range has a quick mate threaded coupling system combined with a high performance anti-vibration mechanism.

The stub acme style threads on the coupling nut and receptacles avoid the possibility of cross threading. This feature also improves the ease of blind mating.

The EMI/RFI performance is enhanced by the grounding spring mechanism.

Specification

STANDARD MATERIALS & FINISHES	
Shells:	Aluminum alloy with choice of plating finish
Insulators:	Rigid plastic silicone rubber
Contacts:	Copper Alloy
Contact Plating:	Gold over nickel plated

MECHANICAL FEATURES	
Contact type:	Crimp
Contact Arrangements:	3 to 128 contacts
Temperature Rating:	-65°C to +175°C

ELECTRICAL DATA	
Current rating:	5 to 45 amps
Shell continuity:	2.5mΩ

ABCIRP Mil-C-5015 Types

Modular Bayonet Lock Connector, Plastic Insulator.

ABCIRP connector series is derived from the American Mil-C-5015 & VG95234 specifications. The connectors are intermateable and interchangeable with corresponding types, but feature a low fire hazard thermoplastic insulator which is removable for repositioning at an alternative orientation. Contacts are industry standard 'F80' type and are retained in the insulator by means of a unique beryllium copper spring clip. Connector sealing features a stepped wire seal grommet which can remove the need to populate unused cavities with filler plugs. Crimp tooling is industry standard and contacts are inserted and removed using simple hand tools.

ABCIRP connectors are approved to French Rail specification N.F.F. 61030

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy, cadmium free plated, black passivation
Insulators:	Low fire hazard thermoplastic
Contacts:	Copper alloy, gold plated
MECHANICAL FEATURES	
Coupling:	Three pin bayonet
Polarisation:	Shell key, keyway in removable insulator
Contact type:	Crimp, rear insertion, front release, rear removable, p.c.tail.
Contact Arrangements:	7 to 60 contacts
Temperature Rating:	-55°C to +125°C
ELECTRICAL DATA	
Maximum contact Current Rating:	10 Amps to 42 Amps
Voltage Rating:	Working 700V to 1250V DC/AC Peak
Contact Resistance:	5 m ohms max

ABCIRH Mil-C-5015 Types

Halogen Free Bayonet Lock Connector

ABCIRH Series. The AB Connectors Industrial Range (H - halogen free) is based on the products covered by the American MilC-5015 and the German VG95234 specifications. These connectors are used extensively throughout the mass transportation, entertainment and general industrial markets.

ABCIRH connectors are interchangeable with all corresponding types and feature contact arrangements from Mil-STD-1651. Positive coupling is indicated by an audible 'snap' and by the alignment of three coloured dots on the receptacle and on the coupling nut of the plug connector.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy with cadmium free plating and choice of passivation colour.
Insulators:	Low Fire Hazard.
Grommet:	Low Fire Hazard.
Contacts:	Copper alloy, silver or gold plated.
MECHANICAL FEATURES	
Coupling:	3 Pin Bayonet.
Polarisation:	Insert orientation. Colour identification
Contact type:	Crimp or p.c.tail
Contact Arrangements:	1 to 85 contacts.
Temperature Rating:	-55°C to +125°C
ELECTRICAL DATA	
Maximum contact Current Rating:	7.5 to 500 amps.
Voltage Rating:	Between 350V and 1750V AC or DC working.
Contact Resistance:	5 milliohms max.

Product Range Overview

ABCIRH Mil-C-5015 Types

Halogen Free Bayonet Lock Connector

ABCIRH Size 49. Shell size 49 connectors are used principally in Rail Transportation for the inter-car and inter-unit jumper cable assemblies. The connectors have all the high performance features of the standard ABCIRH range. Polarisation is achieved by 5 key / keyway system and the free plug is supplied with a rubber covered coupling nut designed to withstand flying ballast and possible damage caused by being accidently dropped onto a hard surface. Insulators arrangements accept signal, power and databus contacts and are supplied in low fire hazard halogen free material.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy with cadmium free plating and a choice of passivation colour.
Insulators:	Low Fire Hazard rubber.
Grommet:	Low Fire Hazard rubber.
Coupling Nut Cover:	Low Fire Hazard rubber.
Contacts:	Copper alloy, silver or gold over nickel plated.

MECHANICAL FEATURES	
Coupling:	3 Pin Bayonet.
Polarisation:	5 Key / Keyway.
Contact type:	Crimp.
Contact Arrangements:	4 to 95 contacts.
Temperature Rating:	- 55°C to + 200°C.

ELECTRICAL DATA	
Maximum contact Current Rating:	7.5 to 245 amps
Voltage Rating:	1250 volts AC or DC Working

AB3S Mil-C-5015 Types

3-Start Coarse Screw Coupling Connector

AB3S Series Triple start ACME style thread for rapid coupling Extended length coupling nut with anti-rotation device Dimensions generally conform to Mil-C-5015 Contact planforms, backshells & accessories common with ABCIRH range Optional rubber covered coupling nut Five key orientation with positive location feature. Used within high vibration applications

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy, cadmium free plated
Insulators:	Low fire hazard rubber or thermoplastic
Contacts:	Copper alloy, gold plated

MECHANICAL FEATURES	
Coupling:	Triple start coarse thread
Polarisation:	5 key/keyway with positive location device
Contact type:	Crimp, removable
Contact Arrangements:	1 to 95 contacts
Temperature Rating:	-55°C to +200°C

ELECTRICAL DATA	
Maximum contact Current Rating:	7.5 to 500 AMPs
Voltage Rating:	between 350V and 1750V AC or DC working
Contact Resistance:	5 Miliohms max

ABMP

ABMP, Signal and High Speed Data Connector

The Signal/High Speed Data Connector is based on the **ABCIRP** bayonet lock connector. They feature a low fire hazard thermoplastic insulator, which is removable for repositioning at an alternative orientation.

There are 4 styles of multi-pole contact available Co-ax, Twin-ax, Tri-ax & Quadrax. The unique contact design allows for simple and robust termination to multi-core. The contacts can be mixed within the same insulator to provide many different combinations of wire termination.

Connector sealing features a stepped wire sealing grommet, which provides a water tight seal to the cables. Crimp tooling is industry standard and the contacts are sandwiched between two plastic insulators removing the need for insertion and extraction tooling.

Specification

STANDARD MATERIALS & FINISHES	
Shells:	Aluminium alloy with cadmium free plating and choice of passivation colour.
Insulator:	Low fire hazard thermoplastic
Contacts:	Copper Alloy, gold plated. Co-ax, Twin-ax, Tri-ax, Quadrax
MECHANICAL FEATURES	
Contact type:	Crimp, multi-pole signal, Sandwich retention
Contact arrangements:	1 to 12 contacts
Temperature Rating:	-55°C to +125°C
ELECTRICAL DATA	
Current rating:	3-5 amps
Contact resistance size 22D:	<14.6mΩ
Shell to shell continuity:	250mΩ

ABIC

Rail vehicle in power, control and communication systems

In conjunction with a large rail contract, TT Electronics developed a range of Inter-Car cable jumpers. These assemblies have been put through survived a full train life-cycle test program. These cable assemblies have the ability to deliver power, signal and high speed data from one train carriage to the next.

Specification

STANDARD MATERIALS & FINISHES	
Shells:	Aluminum alloy with cadmium free plating and choice of passivation colour.
Insulator:	Low fire hazard thermoplastic
Contacts:	Copper Alloy, gold plated. Customisable choice of singular, Co-ax, Twin-ax, Tri-ax, Quadrax
MECHANICAL FEATURES	
Contact type:	Crimp, multi-pole signal, Sandwich retention
Contact arrangements:	Customisable. 2 shell sizes. Consult factory for details
Temperature Rating:	-55°C to +125°C
ELECTRICAL DATA	
Current rating:	3-245 amps.

Pola Power™

Single Pole Power Connector

TT Electronics **Pola Power™** Connectors are designed to specifically meet the continuing demand for more power. Whether it's for power distribution for electric drive vehicles or air conditioning units, TT Electronics makes the connection.

The Pola Power connector range will be approved for use on Rail and Military vehicles and can be qualified to suit other applications.

With a finger proof design and quick disconnection, Pola Power provides solutions for engineers who require a small, light connector which has the capability of delivering big power to applications.

Specification

STANDARD MATERIALS & FINISHES	
Shells:	Aluminum alloy, Passivated s/steel, Nickel Aluminium Bronze.
Shell Plating:	Black Zinc Nickel, RoHS compliant others available on request.
Insulator:	Low fire hazard thermoplastic qualified to EN45545-2 HL3 and BS6853
Contacts:	Copper Alloy
Contact Plating:	Silver, Gold, nickel plated
MECHANICAL FEATURES	
Contact type:	Crimp or threaded
Temperature Rating:	-55°C to +150°C
ELECTRICAL DATA	
Current rating:	300 – 600 – 1000 Amp
Voltage:	3,600 Vac or dc peak
Contact Resistance:	0.06mΩ [NFF61-030]

ABSP

High-current single pole connection

Mono pin connection capable of carrying high current at high temperatures. Connection is retained by a binding clamp allowing quick fit and release for ease of assembly. The ABSP range employs a superior insulator material that gives excellent impact resistance, even at low temperatures. All the materials used in the ABSP range are low smoke, low toxicity.

Specification

STANDARD MATERIALS & FINISHES	
Insulator:	Low fire hazard thermoplastic.
Contact:	Copper Alloy
MECHANICAL FEATURES	
Contact type:	Solder
Temperature Rating:	-40°C to +150°C
ELECTRICAL DATA	
Maximum contact current rating:	300A continuous, 1200A for 1 minute. Based on 0000 cable.
Voltage Proof:	3kV
Operating voltage:	50V

ABPC Power Connectors

Plastic Body Power Distribution Connector

ABPC Series. The AB Power Connector range of heavy duty electrical connectors is designed for general purpose use and to meet the requirements of power distribution in harsh environments.

The outer shell components are manufactured from a tough thermo-plastic to ensure full insulation and high corrosion resistance. Inner shell components are plated aluminium for strength and provide electrical continuity for screening purposes.

The connectors feature bonded leading earth contacts and pilot pins for 'earth loop monitoring'.

The AB Power Connectors have contact arrangements suitable for both single or three phase power supplies.

The connectors conform to specification **CECC 75-201-007.**

Please contact factory for detail of additional versions with signal contacts.

Specification

STANDARD MATERIALS & FINISHES	
Outer Body:	Thermoplastic (Black).
Inner Shells:	Aluminium alloy. Cadmium free plated with olive drab passivation. (Alternative finishes available).
Insulator:	Polychloroprene.
Grommet:	Polychloroprene.
Contacts:	Copper alloy, silver plated. Pilot contact, gold plated.
MECHANICAL FEATURE	
Coupling:	3 start coarse thread with anti -vibration device.
Polarisation:	Key/Keyway.
Contact type:	Solder.
Contact Arrangements:	3 shell sizes, 3 to 6 contacts
Temperature Rating:	-55°C to +100°C.
ELECTRICAL DATA	
Maximum contact Current Rating:	Up to 100 amps.
Voltage Rating:	750V AC or DC peak.
Contact resistance:	5 Milliohms max.

AB700 Power Connectors

Modular Bayonet Lock Connector, Plastic Insulator.

AB700 Series

- Single contact 700 amp rating
- 2-part moulding contact retention
- Fully shrouded pin contact
- Separate cable screen drain wire
- Rapid 3 pin bayonet coupling
- Conforms to Mil-C-5015 mounting dimensions
- Full environmental sealing
- Rubber covered coupling nut
- ABCIRP connectors are approved to French Rail specification N.F.F. 61030

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy, cadmium free plated
Insulators:	Low fire hazard thermoplastic
Contacts:	Copper alloy, silver plated
MECHANICAL FEATURE	
Coupling:	Three pin bayonet
Polarisation:	3 key/keyway
Contact type:	Crimp, removable
Contact Arrangements:	Max. 2 contacts (power+drain)
Temperature Rating:	-55°C to +125°C
ELECTRICAL DATA	
Maximum contact Current Rating:	700 amps
Voltage Rating:	1250V

SB-ORD Power Connectors

Inter-vehicle, Slave Start Connector

Intervehicle Connectors. SB-ORD. Intervehicle connectors fully conform to NATO approved standards and provide a quick, foolproof method of restarting electrically disabled military vehicles in the field through a vehicle-to-vehicle battery jumper system where a 1000 amp maximum current rating is required.

Intervehicle connectors are capable of withstanding severe battle environments and are of single piece, rubber moulded construction impervious to engine fuel and lubricants, shock proof and dirt proof through the use of tight seal protective caps.

An SB-ORD. Intervehicle adaptor is available for interfacing between the previously accepted system of parallelling two lengths of cable with two connectors each and NATO single twin cable and coaxial contact system.

A fully harnessed system is also available, see page 14.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Single piece polychloroprene moulding.
Insulators:	Neoprene.
Contacts:	Copper alloy coaxial, tin plated.
MECHANICAL FEATURE	
Coupling:	'Push-pull' friction.
Contact type:	Solder or crimp with straight bolt on lugs for size 0000 AWG to 4 AWG cable.
Contact Arrangements:	Single pole coaxial construction.
Temperature Rating:	-55°C to +100°C.
ELECTRICAL DATA	
Maximum contact Current Rating:	1000 amps for 6 minutes.
Voltage Rating:	110V DC.
Contact Resistance:	0.5 milliohms max.

SB-ORD

Special Purpose Connectors

Heavy Duty Trailer Connector

SB-ORD. Trailer connectors were designed for electrical coupling applications between military vehicles and towed trailers where rough handling, environmental sealing and ease of coupling is required. Trailer connectors feature a heavy rubber moulded body with a brass inner shell, and offer 7 contact arrangements in shell size 28.

Accessories include protective caps, grommets, grommet nuts, and sealing gaskets.
A fully harnessed system as above is also available, see page 14.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Brass, cadmium plated with olive drab passivation, black rubber covered plug.
Insulators:	Polychloroprene.
Contacts:	Copper alloy, silver or gold plated.
MECHANICAL FEATURE	
Coupling:	'Push-pull' friction.
Polarisation:	Insert Orientation.
Contact type:	Solder non-removable.
Contact Arrangements:	In shell size 28 only 7 platforms from 5-37 contacts.
Temperature Rating:	-55°C to +100°C.
ELECTRICAL DATA	
Maximum contact Current Rating:	5 to 92 amps.
Voltage Rating:	Between 350V and 750V AC or DC working.
Contact Resistance:	5 milliohms max.

AB05/AB05H

Mil-C-26482 Series 1 Types

Modular Bayonet Lock Connector, Plastic Insulator.

AB05 Series. AB05 connectors conform to the stringent requirements of BS9522 F0017, and US specification Mil-C-26482, series 1 solder.

These connectors feature 3 pin bayonet coupling.

AB05 connectors offer economical lightweight solutions for interconnection needs in commercial and industrial applications.
Insulators are polychloroprene and provide excellent solvent and insulation resistance and environmental sealing.

Accessories include straight outlets, cable clamps, grommet sealing nuts, general duty adaptors and protective caps.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy cadmium free plated with olive drab passivation. Alternative finishes and colours available on request.
Insulators:	Polychloroprene (Standard). Low fire hazard rubber (High temp).
Contacts:	Copper alloy, gold plated.
MECHANICAL FEATURE	
Coupling:	3 Pin Bayonet.
Polarisation:	5 Key/Keyway or insert orientation.
Contact type:	Solder, crimp or p.c.tails.
Contact Arrangements:	2 to 61 contacts.
Temperature Rating:	-55°C to + 125°C. (Standard) -55 °C to +200°C (High temp)
ELECTRICAL DATA	
Maximum contact Current Rating:	7.5 to 23 amps.
Voltage Rating:	Working AC or DC peak. Size 20 contacts 700V. Size 16 contacts 1200V.

AB06 Mil-C-26482 Series 1 Types

Audio Miniature Bayonet Lock Connector.

AB06 Series. AB06 connectors are a development of the established AB05 range and are particularly suitable for tinsel cordage applications in audio equipment.

Designed to the requirements of the Royal Signals and Radar Establishments, AB06 connectors are available in shell sizes 8, 10 and 12, and offer all the performance characteristics and design features of AB05 (Pattern 105) connectors. An alternative 'snatch' type coupling nut for quick release applications are also available

Accessories include straight polychloroprene sleeves for tinsel cordage, 90° outlets, and protective caps.

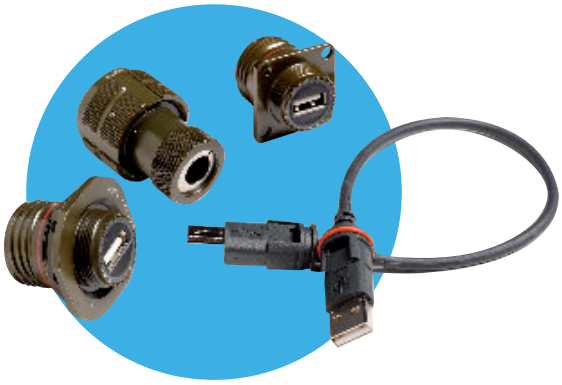
The Bowman 10-76 connector range are also available.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy cadmium free plated with olive drab passivation. Alternative finishes and colours available on request.
Insulators:	Polychloroprene
Contacts:	Copper alloy, gold plated.
MECHANICAL FEATURE	
Coupling:	Bayonet ('snatch' available in shell size 10).
Polarisation:	5 Key/Keyway.
Contact type:	Solder, crimp or p.c.tails.
Contact Arrangements:	2 to 12 contacts.
Temperature Rating:	-55°C to +125°C.
ELECTRICAL DATA	
Maximum contact Current Rating:	7.5 to 13 amps.
Voltage Rating:	Working AC or DC peak. Size 20 contacts 700V. Size 16 contacts 1200V

RJ45 and USB

High speed RJ45 & USB connector systems



The high speed **RJ45 & USB** connector systems incorporate an ABAC (MILDTL-38999 series III) or AB05 (MIL-DTL-26482) derived metal shell with full 360 degree EMC and mechanical protection, and has been designed to meet the requirements of high speed data connections where reliability through environmental sealing and enhanced mechanical protection are required.

The connectors have been designed to offer real value to the user with no tooling for insertion/extraction of insert and no protruding parts that can be damaged. The receptacles are supplied as assemblies, not a kit of parts, allowing constant 360°grounding of insert to shell, no additional assembly for consistent performance.

Specification

STANDARD MATERIALS & FINISHES	
Shells:	Aluminium, Aluminium bronze, Stainless Steel
Insulator:	Rigid Plastic
Contacts:	Copper Alloy, gold over nickel
MECHANICAL FEATURE	
Coupling:	3 start thread (ABAC) or Bayonet Lock (AB05)
Temperature Rating:	-40°C to +120°C
DATA PERFORMANCE	

Cat 5e per ISO/IEC 11801

Cat 6 1Gb with enhanced grounding option

Cat 6a 10Gb with enhanced grounding option

USB High Speed (2.0) 480Mbit/sec

ABBMS/HTABBMS

Mil-C-5015 Types

BS Approved Bayonet Lock Connector

ABCIRH Series. ABBMS Bayonet connectors are based on Mil-C-5015 and conform to BS9522-F0032, and to VG 95234 (Germany).

ABB Connectors feature bayonet lock coupling, crimp or solder contacts, protection against water ingress and excellent shielding and continuity characteristics between mated connectors.
The connectors are available with standard polychloroprene insulators which remains flexible at temperatures up to 125°C during a 1000 hour test programme.

A limited number of contact arrangements are available with high temperature insulators which operate between -40°C to + 190°C. (HTABBMS)

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy cadmium free plated with olive drab passivation.
Insulators:	Polychloroprene or Fluorocarbon (high temp).
Grommet:	Polychloroprene or Fluorosilicone (high temp).
Contacts:	Copper alloy, silver or gold plated.
MECHANICAL FEATURE	
Coupling:	3 Pin Bayonet.
Polarisation:	Insert orientation. Colour identification
Contact type:	Crimp or p.c.tail
Contact Arrangements:	1 to 61 contacts.
Temperature Rating:	- 55°C to + 125°C, - 40°C to + 190°C (high temp).
ELECTRICAL DATA	
Maximum contact Current Rating:	7.5 to 500 amps.
Voltage Rating:	Between 350V and 1750V AC or DC working.
Contact Resistance:	5 milliohms max.

SBMS/HTSBMS

Mil-C-5015 Types

BS Approved Fine Screw Coupling Connector

SBMS Series. SBMS (MS-E/5MS) connectors conform to the environmental requirements of US Specification MIL-C-5015 and BS9522-F0030. SBMS connectors are approved to the requirements of the RARDE (CH) 5MS specifications.

SBMS connectors reduced overall size and improved sealing characteristics of contemporary MIL-C-5015 connectors, whilst still providing intermateability and interchangeability features.
SBMS connectors are shock and vibration proof, and are environmental and pressure sealed.

Insulators are polychloroprene.
A limited number of contact arrangements are available with high temperature insulators which operate between -40°C to +190°C. (HTABBMS)

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy cadmium plated with olive drab passivation. Alternative finishes and colours available on request.
Insulators:	Polychloroprene or Flourocarbon (high temp)
Contacts:	Copper alloy, silver plated, gold optional.
MECHANICAL FEATURE	
Coupling:	Fine thread.
Polarisation:	Insert orientation.
Contact type:	Solder non-removable.
Contact Arrangements:	2 to 37 contacts.
Temperature Rating:	-55°C to +100°C, + 1100°C for 20 mins (fireproof range). -40°C to 190°C (high temp).
ELECTRICAL DATA	
Maximum contact Current Rating:	4.5 to 92 amps.
Voltage Rating:	Between 350V and 750V AC or DC working.
Contact Resistance:	10 milliohms max.

UKAN

Mil-C-5015 Types

Fine Screw Coupling Connector

UKAN. UKAN connectors are designed in accordance with EL 1987,DEF 5321 and MIL-C-5015. High grade one piece resilient insulators feature an integral rubber retention system to accommodate rear insertion, front release crimp contacts. The connector is available with special inserts which are kerosene resistant and immune to the disintegrating effects of ozone and U.V. light. The standard range features aluminium alloy shells, but a fireproof range with steel shells is available and is capable of withstanding flame temperatures of 1100°C for 20 minutes.

Contact arrangements cover from 1 to 48 contacts in 11 shell sizes. A comprehensive range of outlet fittings is available.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Standard range - aluminium alloy, Alocrom 1200. Fireproof range -mild steel - cadmium plated,olive drab passivated.
Insulators:	Silicone rubber.
Contacts:	Copper alloy, silver or gold plated.
MECHANICAL FEATURE	
Coupling:	Fine Thread.
Polarisation:	Insert orientation.
Contact type:	Solder or crimp removable.
Contact Arrangements:	1 to 48 contacts.
Temperature Rating:	-55°C to +190°C, + 1100°C for 20 mins (fireproof range).
ELECTRICAL DATA	
Maximum contact Current Rating:	12 to 100 amps.
Voltage Rating:	Working AC or DC peak 2KV AC RMS.
Contact Resistance:	10 milliohms max.

Mk35 Marine Connectors

High Density Screw Coupling Connector

Mk35 Series. The AB Connectors Mk35 Connector series is derived from the American Mil-C-38999 Series III specification. The connectors intermate and can be interchanged with the standard Series III connector, but to ensure optimum performance in the most severe environments, Mk35 connectors feature nickel aluminium bronze as the material for shells, coupling nuts and other major components.

Mk35 connectors feature 100% 'scoop proof' design and coupling is achieved by a triple start course thread. The connectors also feature a self locking antivibration mechanism for secure mating in high vibration environments.

Contacts which conform to Mil-C-39029 are crimp rear insertion, rear extraction and the socket is protected from probe damage by using a restricted entry design. Sealing between mating connectors is by compression of a interfacial seal and around each individual contact. A comprehensive range environment/plain backshells and accessories is available.

AB Mk35 connectors conform to the requirements of CECC 75 201 002 Specification.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Marine bronze, self finish.
Insulators:	Assembly of rigid plastic/silicone rubber
Contacts:	Copper alloy, gold plated
MECHANICAL FEATURE	
Coupling:	Triple start course thread
Polarisation:	5 Key/Keyway.
Contact type:	Crimp, rear insertion, rear release, rear removable
Contact Arrangements:	2 to 128 contacts
Temperature Rating:	-65°C to +175°C
ELECTRICAL DATA	
Maximum contact Current Rating:	3 amps to 16 amps
Voltage Rating:	Working 500V to 2300V DC/AC Peak
Contact Resistance:	5 m ohms max

Mk18 Marine Connectors

2-Start, Coarse Screw Coupling Connector

Mk18 (Pattern 608). A complete system of medium density connectors and accessories designed to withstand extreme environmental conditions. Meeting the requirements of BS9522-F0020, Mk18 connectors are particularly suitable for exposed areas in marine and land based equipments. The nickel aluminium bronze shells provide excellent corrosion resistance coupled with high strength.

The quick start threaded coupling nut with antivibration device gives positive controlled compression of the interface seal in a metal to metal condition, resulting in a screening performance of 75dB at 100MHz typical and 55dB at 1000MHz.

Mk 18 connectors are available in 9 shell sizes with planforms, based on Mil-C-26482 accommodating from 2 to 61 contacts.

Sealed outlets accommodate jacketed screened multicore cables and provide a cable entry which is watertight to a depth of 12 feet.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Nickel aluminium bronze - antiglare finish.
Insulators:	Polychloroprene.
Contacts:	Copper alloy, gold plated.
MECHANICAL FEATURE	
Coupling:	Quick start threaded, with audible anti-vibration feature.
Polarisation:	5 Key/Keyway.
Contact type:	Crimp removable. Solder and pc tail- non removable.
Contact Arrangements:	2 to 61 contacts.
Temperature Rating:	-55°C to +125°C.
ELECTRICAL DATA	
Maximum contact Current Rating:	5 to 50 amps.
Voltage Rating:	Working AC or DC peak between 700V and 1500V.

Mk38 Marine Connectors

3-Start, High Density Screw Coupling Connector

Mk38. The Mk38 system of connectors conform to BS9522-F0034 and can withstand the toughest conditions found in the military ground and marine equipment fields.

The range features a high density 100% scoop proof design with a coupling mechanism featuring a quick start thread with an anti-vibration device within a course ribbed nut. This provides positive metal to metal bottoming between connector halves, resulting in a typical screening performance of 75 dB at 100MHz and 65dB at 1000MHz.

MK38 connectors are available in shell sizes accommodating from 3 to 128 contacts in a comprehensive range of platforms compatible with MIL-C-38999 Series 1.

Crimp rear insertion, rear release contacts conform to MIL-C-39029.

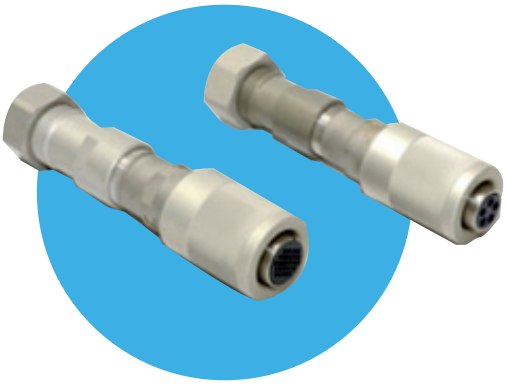
The connector range is available with a full complement of sealed outlets and accessories.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Marine bronze, self finish.
Insulators:	Assembly of rigid plastic/silicone rubber
Contacts:	Copper alloy, gold plated
MECHANICAL FEATURE	
Coupling:	Triple start course thread
Polarisation:	5 Key/Keyway.
Contact type:	Crimp, rear insertion, rear release, rear removable
Contact Arrangements:	3 to 128 contacts
Temperature Rating:	-65°C to +200°C
ELECTRICAL DATA	
Maximum contact Current Rating:	3 amps to 24 amps
Voltage Rating:	1300V test voltage - AC RMS
Contact Resistance:	5 m ohms max

Mk22 Marine Connectors

2-Start, Coarse Screw Coupling Connector



Mk22. Low to medium density connectors with sealed cable outlets designed for marine applications. Materials, finishes and construction have been engineered to meet the severe environmental and mechanical demands encountered in above and below deck applications. MK22 connectors are approved to VG96930 specification.

A feature of the range is a two part outlet fitting which simplifies wiring of multicore jacketed cables. Coupling is achieved by a fine threaded coupling nut which gives positive sealing and screen continuity.

The current range covers 26 contact arrangements accommodating a maximum of 108 contacts in the largest shell size.

Specification

STANDARD MATERIALS & FINISHES	
Shells:	Aluminium allot cadmium plated, olive drab passivation. For harsher environments, a combination of stainless steel and hard anodised aluminium.
Insulator:	Polychloroprene.
Contacts:	Copper alloy, gold plated
MECHANICAL FEATURE	
Coupling:	Fine thread.
Polarisation:	Insert orientation.
Contact type:	Crimp or solder removable.
Contact Arrangements:	1 to 108 contacts.
Temperature Rating:	-55°C to +125°C
ELECTRICAL DATA	
Maximum contact Current Rating:	13 amps to 150 amps.
Voltage Rating:	Working AC or DC peak between 500V and 2800V.

AB22 Marine Connectors

Fine Screw Coupling, Medium Density Connector

AB22. Low to medium density connectors with sealed cable outlets designed for marine applications. Materials, finishes and construction have been engineered to meet the severe environmental and mechanical demands encountered in above and below deck applications. AB22 connectors are approved to VG96930 specification.

A feature of the range is a two part outlet fitting which simplifies wiring of multicore jacketed cables. Coupling is achieved by a fine threaded coupling nut which gives positive sealing and screen continuity.

The current range covers 26 contact arrangements accommodating a maximum of 108 contacts in the largest shell size.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy cadmium plated, olive drab passivation. For harsher environments, a combination of stainless steel and hard anodised aluminium.
Insulators:	Polychloroprene.
Contacts:	Copper alloy, gold plated.
MECHANICAL FEATURE	
Coupling:	Fine thread.
Polarisation:	Insert orientation.
Contact type:	Crimp or solder removable
Contact Arrangements:	1 to 108 contacts.
Temperature Rating:	-55°C to +125°C.
ELECTRICAL DATA	
Maximum contact Current Rating:	13 to 150 amps.
Voltage Rating:	Working AC or DC peak between

ABSB Marine Connectors

Stainless Steel Bayonet Lock Connector

ABSB Series. Based on the ABBMS Series of bayonet coupling connectors the ABSB range features shells and accessories manufactured from high corrosion resistant stainless steel.

Ideally suited for marine applications, the ABSB range is also for projects where harsh, highly corrosive environments will be encountered.

The standard accessory is designed to accept jacketed screened cable and heat shrink boot.

Performance of the connector is generally to VG 95234 with additional environmental requirements.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	High corrosion resistant stainless steel, anti-glare finish.
Insulators:	Polychloroprene.
Grommet:	Polychloroprene.
Contacts:	Copper alloy, gold over nickel plated.
MECHANICAL FEATURE	
Coupling:	3 Pin Bayonet.
Polarisation:	Insert orientation.
Contact type:	Crimp or solder.
Contact Arrangements:	3 - 61 contacts
Temperature Rating:	- 55°C to + 125°C
ELECTRICAL DATA	
Maximum contact Current Rating:	7.5 to 245 amps.
Voltage Rating:	Between 350V and 1750V AC or DC working.
Contact Resistance:	5milliohms max.

ABLS

Professional Lighting & Audio Connectors

yonet Lock Lighting & Audio Connectors

ABLS Series

- Head to Ballast Connector
- Connectors cover 575W to 18KW requirement
- Based On Mil-Std-5015
- Rapid & secure 3-pin bayonet coupling, 120° coupling nut rotation with audible & visual indication when fully mated.
- Industry standard crimp contacts
- Tough aluminium alloy body able to withstand continuous abuse.
- Environmentally sealed to minimum IP67 for exterior use.
- Extended length course grip coupling nut for secure handling.
- Long backshell with either 'PG', cable clamp feature or 'basket weave' cable grip accessory.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy, black protective finish
Insulators:	Low fire hazard rubber
Contacts:	Copper alloy, gold or silver plated
MECHANICAL FEATURE	
Coupling:	3 pin bayonet
Polarisation:	Insert orientation
Contact type:	Crimp removable
Contact Arrangements:	6 to 150 contacts
Temperature Rating:	-55°C to +125°C
ELECTRICAL DATA	
Maximum contact Current Rating:	5 amps to 75 amps
Voltage Rating:	Working 350V to 1250V DC/AC Peak
Contact Resistance:	5 m ohms max

ABLC

Professional Lighting & Audio Connectors

Heavy Duty Trailer Connector

ABLS Series

- 19 Pin Lighting Connector
- Designed for the professional lighting industry
- Fully Compatible with corresponding competition types
- Rapid coarse thread screw coupling.
- Aluminium shells with heavy duty coupling nut for secure handling.
- Crimp or solder contacts.
- Long backshell for 'PG', cable clamp adaptor or 'basket weave' cable grip accessory.
- Earthing version with integral shell earth tag & first make last break contact.
- Black cadmium free hard wearing surface finish.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Aluminium alloy, black protective finish
Insulators:	Polychloroprene rubber
Contacts:	Copper alloy, gold plated
MECHANICAL FEATURE	
Coupling:	Coarse thread
Polarisation:	Key/keyway
Contact type:	Solder
19 contacts	19 contacts
Temperature Rating:	-55°C to +125°C
ELECTRICAL DATA	
Maximum contact Current Rating:	41 amps max, 23 amps rated
Voltage Rating:	Working 700V d.c., 500V a.c.
Contact Resistance:	5 m ohms max

ABXS Industrial Connectors

Miniature Push-Pull Coupling Connector

ABXS With its ingenious ball-bearing coupling mechanism, the ABXS Miniature Push-Pull Connector is easy to use and provides a reliable interconnect for signal and power in audio, control and instrumentation applications. The range has two shell sizes housing 3 to 9 gold plated contacts in a range of aesthetically pleasing long life shell finishes.

The ball-bearing mechanism provides easy connection by pushing on the back accessory and easy disconnection by pulling on the coupling nut. The connector cannot be disconnected by pulling on the cable or backshell using normal force.

The shells are made from copper alloy with a choice of finishes in bright nickel or black epoxy.

Specification

STANDARD MATERIALS & FINISHES	
Shell:	Copper alloy, nickel or black protective finish
Insulators:	Thermoplastic
Contacts:	Copper alloy, gold plated
MECHANICAL FEATURE	
Coupling:	Ball bearing, push-pull
Polarisation:	Key/keyway
Contact type:	Solder
Contact Arrangements:	3 to 9 contacts
Temperature Rating:	-55°C to +85°C
ELECTRICAL DATA	
Maximum contact Current Rating:	3 amps rated
Voltage Rating:	Working 250V d.c.

Wirelock

Industrial Connectors

Mining Connectors

Initially designed for electronic chock control applications in the coal mining industry, the connectors are now extensively used in hazardous and rugged areas where high humidity, dust, fluid contaminants and industrial vapours prevail.

Positive coupling is by means of a unique ‘push-pull’ feature with provision for inserting a locking staple in any one of four positions.

Heavy duty robust brass shells and accessories, cadmium plated offer the advantages of mechanical strength with high resistance to corrosion.

Insulators are utilised from the ABBMS, AB05 and SB104 ranges with up to 26 contacts and a maximum current rating of 35 amps.

Sealing against water ingress is achieved between mating connectors by using an ‘O’ ring and by a system of cable hose adaptor and ‘O’ ring on the rear of the connector.

A range of accessories includes straight and 90° outlets and protective caps

Further Details

For detailed product specifications, please contact the AB Connectors Sales Office.

Various - Filters

Special Purpose Connectors

EMI/RFI Filtered Connectors

Filter Connectors. The concern over interference in sophisticated electronic equipment, now operating on lower power levels, has seen an increase use of in-line filter devices to suppress either the effect of externally generated interference, or to reduce emissions from the equipment itself.

AB Connectors have engineered solutions which can be adapted to many of the market standard connector ranges, making retro-fitting to existing equipment a quick and effective solution, to EMI/RFI problems.

As an alternative, AB Connectors produce Interface Filter Adaptors which simply plug in between existing connectors, thereby making modification in the field a simple and cost effective option.

Specification

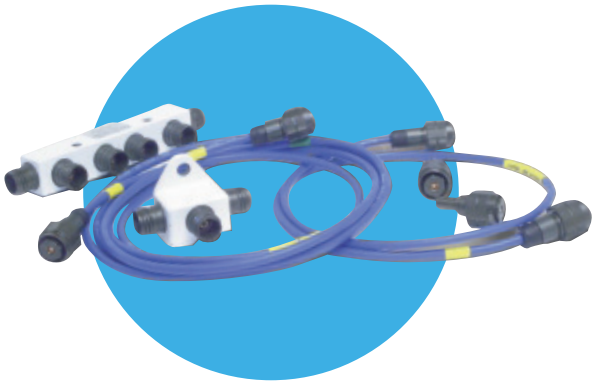
Connector Types:	MIL-C-5015 MIL-C-5015 MIL-C-26482 Series 1
Coupling:	Bayonet & Screw.
Contact Type:	Non-Removable, solder or p.c. tail.
Filter Type:	'C' or Pi.
Technology:	Planer or tubular.

Full technical information can be obtained by contacting the AB Connectors Sales Office.

Various - Databus

Special Purpose Connectors

Data Bus Assemblies



Databus. AB Connectors can offer solutions ranging from discrete connectors and contacts up to complete cabled and tested systems. AB databus products conform to the requirements as defined in Mil-STD 1553B, Def. Stan. 00-18 and Def. Stan. 00-19.

Connector Styles are ruggedised for extremely harsh environments i.e. naval, fighting vehicles and mass transportation or lightweight which are especially suited to aerospace applications. The contacts which have the mating geometry Mil-C-39029/90-91, have been designed to simplify the crimping and assembly processes.

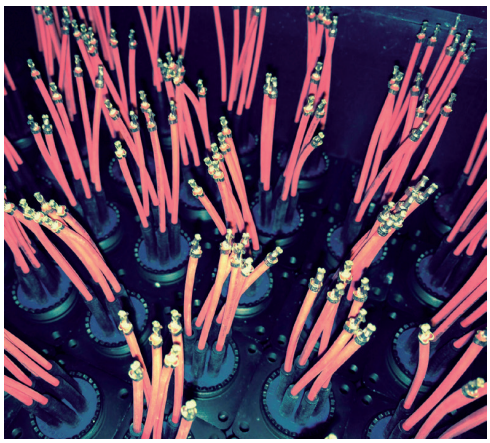
AB Databus connectors and systems are proven on current fighting vehicle programmes including active service situations.

Full bespoke harness/system design available.

Full technical information can be obtained by contacting the AB Connectors Sales Office.

Value Add: Wired Receptacle's

Operating from the principle site in South Wales U.K., TT Electronics, brand AB Connectors Ltd extends its service by supplying wired receptacle products with pre-determined wire lengths ideal for use in enclosures or for creating custom wiring configurations..



Key Benefits

- Quality Approvals
- MIL-STD-790 Quality Systems (Defence)
- BS EN ISO 9001 Quality Systems (Global)
- ISO 14001 Environmental (Global)
- IRIS Quality Systems (Traction)
- NF-F-61-030

Value Add: Harnessing

TT Electronics Connectors business is a recognised world leader in harness design and manufacture being able to meet harsh environmental conditions.

As a result of TT Electronics unique position, we are able to engineer connectors and accessories to enable the best solution for the most critical application. This can be achieved to our design or on a build to print basis.

All harnesses are fully tested and certified using the latest test and validation equipment before leaving the manufacturing centre thus ensuring their quality and performance.

Key Benefits

- IPC620 qualified operators
- IRIS, International Railway Industry Standard, globally recognized standard for the railway sector
- In-house design and testing facilities incl. MK tester, Sirus, RF Anristu.
- Ability to handle complex build to print such as over-moulded harness and power distribution pack integration

Sub-assembly Box Build

TT electronics Connectors are able to design and integrate a number of sub-assemblies into a complete system solution. These can be designed from specification or evolved from conceptual idea.

TT Electronics have a number of own brand special products that demonstrate our understanding of the customer's needs. We are one of the few remaining British companies with the core skills necessary to present a total solution to your system integration needs.

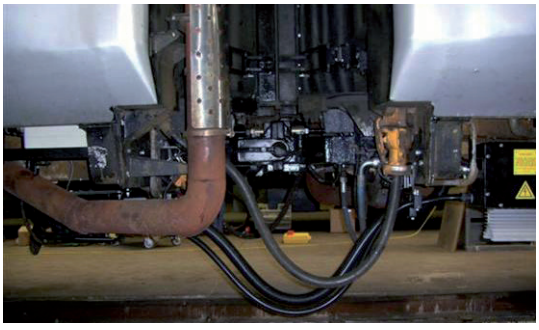
TT Electronics Connectors understands the demands of producing engineered solutions for critical applications, to ensure 'fit for purpose'. The product development team are on hand to take concept to reality or just to advise on good practice. All units are fully tested including using MK Auto-testers and functional test rigs.

Key Benefits

- IPC620 qualified operators
- In-house design and testing facilities, complimented by additional TT Electronics Group test facilities for the most demanding requirements.
- In-house capability to develop functional testing to mimic in-house functionality
- Ability to handle complex build to print such as over-moulded harness and power distribution pack integration.

Overhaul & Repair Services

TT electronics brand AB Connectors offers a complete portfolio of services, delivered by experienced professionals across the UK which provides an effective way to evolve customers' existing rail investments. This represents the most cost effective way to meet new regulatory or technical demands without excessive investment requirements. Our end to end service is tailored to meet your needs whilst ensuring full product compliance and performance is never compromised.



Key Benefits

- Maximise your return on investment & reduce return to service times
- Improve Train Availability and minimise recurrent expenditure
- Rapid and efficient delivery of work to cost
- Dovetail into your organisation to provide a seamless Turnkey delivery, reducing management overhead
- Meet passenger needs through cost effective upgrades instead of new investment

Information about Safety

This information is to be used in conjunction with the Product Catalogue and Product Specification.
Products may be safely used in the applications for which they have been designed and within the specified ratings and environments. If products are exposed to conditions outside the performance ratings or specified environments they may constitute a hazard.
In particular it should be noted that:---

1. Material Content of Products. Circular Connectors generally use metalwork parts made of copper, copper alloy, aluminium alloy, aluminium-bronze, phosphor-bronze or steel, which, dependant on the particular application, may be passivated and protected with cadmium or zinc plate - in conjunction with chromated or anodised surface finishes. The insulating materials can be either natural or synthetic rubber, together with plastic or glass filled plastic moulded parts. Contact materials vary with product type but are usually made of copper, copper alloy, nickel, phosphor-bronze, alumel, chromel or steel.

2. Electric Shock, Burns and Fire. Hazard can occur if the product is used outside the specified parameters or if the product is damaged, wrongly wired or poorly assembled, or poorly integrated into larger equipments, or contaminated with conductive fluids. Live circuit terminations must be protected and live circuits never broken by demating products.

Hotspots may be created when resistance is increased due to damage or incorrect integration particularly soldering, crimping o loose terminations. Overheating can cause breakdown of insulation, electric shot, burns or, ultimately, fire. In the event of fire noxious and/or toxic fumes may be released and, in these circumstances, any fire involving the product should be dealt with by personnel properly equipped.

Connector products with exposed terminators or contacts should not be used on the current supply side of a circuit with exposed contacts on an unmated product. Before making a circuit live, the product and wiring should be checked to ensure that there is no damage and no electrically conducting debris present.
Circuit resistance checks should also be conducted before making the circuit live. Always ensure that the correct tools, (specified by AB Connectors Ltd.) are employed for crimping and assembly and that connectors are assembled and wired by properly trained personnel.

3. Disposal of Products. Products should not be burnt.

4. Use Transport and Storage of Products. Care must be exercised to avoid damage to any part of the products during transporting, storage or use. The products, as manufactured, are free of sharp edges. Abnormal transit or storage conditions and abuse during installation can give rise to damage. Products should not be used in a damaged condition.

Improper storage (particularly of damaged products) can give rise to additional hazards particularly corrosion. Your attention is specifically drawn to the need of proper storage of products containing cadmium and you are advised to see the Guidance Note from the Health and Safety Executive on Cadmium - Health and Safety Precautions.

Safety Rules

1. Ensure all conductor wires are capable of withstanding the electrical and environmental conditions of the application.
2. Always use the correct assembly tools for cables, contacts and connectors.
3. Make circuit resistance checks before making a circuit live.
4. Always protect live circuits and never demate a live connector.
5. Never use a damaged connector.
6. Never burn discarded connectors or cable.
7. IF IN DOUBT, ASK.

N.B. Additional information on the products and the materials used in them may be obtained from the Sales Department of AB Connectors Ltd.

Shelf life for rubber components.

AB Connectors incorporate a number of rubber components within their connectors. Most rubbers change in physical properties during storage e.g. excessive hardening, softening, cracking or other surface degradation. These changes may be the result of particular factors or a combination of factors such as light, heat, humidity, oils or solvents.

With a few simple precautions the shelf life may be considerably lengthened.

The storage temperature should be between +5 and +25 degrees C. Direct contact with sources of heat such as boilers, radiators and direct sunlight should be avoided. It is advisable to cover any windows of storage rooms with a red or orange coating or screen. The relative humidity in the storeroom should be below 70%. Very moist or very dry conditions should be avoided. Condensation should not occur.

If the above recommendations are adhered to, then AB Connectors would warrant a shelf life of four years for its products.

NB
The company reserves the right and may change or vary specification without prior written notice

Global Presence

The world's demand for electronics is increasing as new technologies, with a higher dependence on complex components, are being adopted by a broader customer base. This growth provides TT electronics an assured future as we focus our efforts to deliver excellence in customer service and quality products to these markets.

From our strong UK base, the company has achieved truly global reach. We have established technical and manufacturing facilities in strategic countries maintaining the successful formula of close liaison with our customers in all major overseas markets. In addition, through strategic relationships with Original Equipment Manufactures around the world, we are now in the enviable position where we gain double benefit - from the growth in their markets and from the increase in the electronic content of end products.

Information on TT companies can be found by contacting:-

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