

TT Electronics supplies high-reliability connector solutions to some of the largest transportation systems in the world and has built strong partnerships based on innovation and engineering expertise.



Serving OEMs and System Integrators with custom designed and engineered electronics



Rolling Stock
Inter-Car
Infrastructure

RAIL SOLUTIONS

PRODUCT GUIDE

TT ELECTRONICS
CONNECTORS



ABCIRH

ABCIRP

AB05H

ABMP

OcTrain®

SteadyShield®

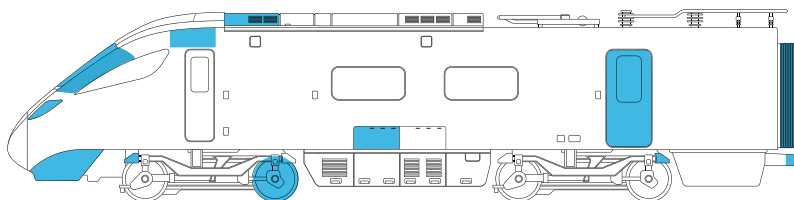
Pola Power®

CAAU

Applications	Supporting Products	ABCIRH	ABCIRP	AB05H	ABMP	OcTrain®	SteadyShield®	Pola Power®	CAAU
Rolling Stocks	Bogies	⊙	⊙					⊙	
	Battery Systems	⊙						⊙	
	Engine							⊙	
	Brakes	⊙	⊙		⊙	⊙	⊙		
	Traction systems	⊙	⊙		⊙	⊙	⊙	⊙	
	Train Comms Systems/ WIFI / CCTV / PIS / Audio Systems	⊙	⊙	⊙	⊙	⊙	⊙		
	Drivers Cabin Equipment	⊙	⊙	⊙	⊙	⊙	⊙		⊙
	Automatic Warning System								⊙
	HVAC (Heating, Ventilation Air Conditioning)	⊙	⊙	⊙	⊙	⊙	⊙		
	Couplers	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	Lighting	⊙	⊙	⊙	⊙	⊙	⊙		
	Phone and Communications	⊙	⊙	⊙	⊙	⊙	⊙		
	Wipers	⊙	⊙	⊙	⊙	⊙	⊙		
	Data Storage and Record	⊙	⊙	⊙	⊙	⊙	⊙		
	Doors, Ramps and Access Devices	⊙	⊙	⊙	⊙	⊙	⊙		
	Speed Sensor	⊙	⊙	⊙	⊙	⊙	⊙		
	ETCS	⊙	⊙	⊙	⊙	⊙	⊙		
Inter-Car	Power and Data Inter-Car Jumpers	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	Auto Couplers	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
Infrastructure	Signalling	⊙							
	Points	⊙							
	Level Crossing	⊙							
	ERTMS	⊙							

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 MIL-C-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.



STANDARD MATERIALS & FINISHES

Shell:	Aluminium alloy, cadmium free plated, black passivation
Insulator & Grommet	Low fire hazard rubber conforms to EN45545 HL3 R22/R23
Contacts:	Copper alloy, silver or gold plated

MECHANICAL FEATURES

Coupling:	Three pin reverse bayonet
Polarisation:	Insert orientation. Colour identification
Contact type:	Crimp or p.c.tail
Contact Arrangements	1 to 95 contacts
Temperature Rating:	-55°C to +200°C
Environmental	IP67

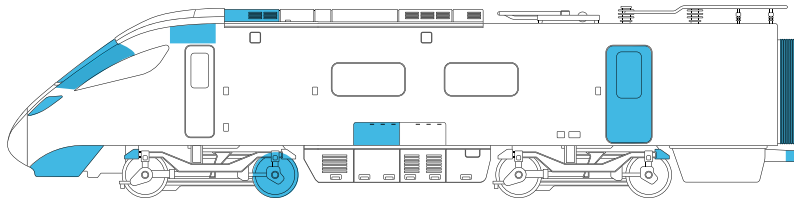
ELECTRICAL DATA

Maximum contact Current Rating:	245 Amps
Voltage Rating:	Working 350V to 1750V DC/AC Peak
Contact Resistance:	5 milliohms max

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 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 NF F 16-030



STANDARD MATERIALS & FINISHES

Shell:	Aluminium alloy with cadmium free plating and choice of passivation colour
Insulator & Grommet	Low fire hazard conforms to EN45545 HL3 R22/R23
Contacts:	Copper alloy, silver or gold plated.

MECHANICAL FEATURES

Coupling:	Three pin reverse 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
Environmental:	IP67

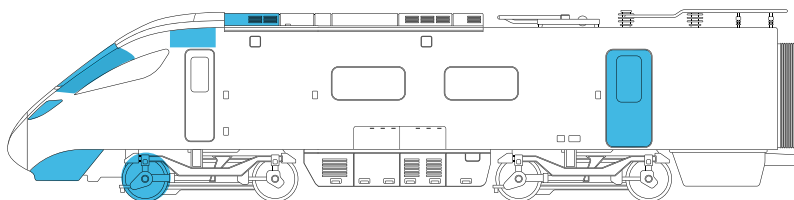
ELECTRICAL DATA

Maximum contact Current Rating:	7.5 to 73 Amps
Voltage Rating:	Between 700V and 1250V AC or DC working
Contact Resistance:	5 milliohms max

AB05H

MIL-C-26482 Series 1 Types

Halogen Free Bayonet Lock Connector



AB05H connectors conform to the stringent requirements of BS9522 F0017, and US specification MIL-C-26482. These connectors feature three pin bayonet coupling.

AB05 connectors offer economical lightweight solutions for interconnection needs in commercial and industrial applications.

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



STANDARD MATERIALS & FINISHES

Shell:	Aluminium alloy cadmium free plated black passivation. Alternative finishes and colours available on request.
Insulator & Grommet	Low fire hazard conforms to EN45545 HL3 R22/R23
Contacts:	Copper alloy, gold plated

MECHANICAL FEATURES

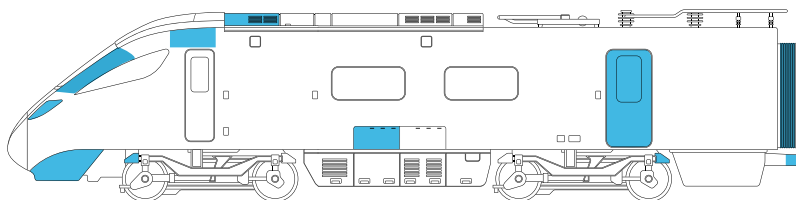
Coupling:	Three pin bayonet
Polarisation:	Keyway orientation
Contact type:	Solder, crimp or p.c.tails
Contact Arrangements	2 to 61 contacts
Temperature Rating:	-55°C to + 125°C
Environmental:	IP67

ELECTRICAL DATA

Maximum contact Current Rating:	5 to 23 amps
Voltage Rating:	Working AC or DC peak. Size 20 contacts 700V. Size 16 contacts 1200V

ABMP

Signal And High Speed Data Connector



The Signal/High Speed Data Connectors are 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 5 styles of multi-pole contact available Co-ax, Twin-ax, Tri-ax & Quadrax OcTrain®. 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.



STANDARD MATERIALS & FINISHES

Shell:	Aluminium alloy with cadmium free plating and choice of passivation colour
Insulators:	Low fire hazard thermoplastic conforms to EN45545 HL3 R22/R23
Grommet:	Low fire hazard

MECHANICAL FEATURES

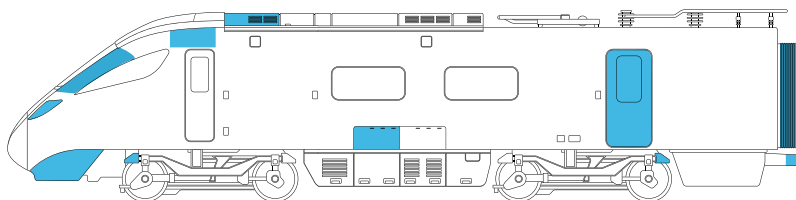
Contact type:	Crimp, multi-pole signal, Sandwich retention
Contact arrangements:	1 to 12 contacts
Temperature Rating:	-55°C to +125°C
Coupling:	Three pin reverse bayonet
Environmental:	IP67

ELECTRICAL DATA

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

OcTrain®

10Gb Ethernet Contact For Cat 7 Cable



TT Electronics OcTrain® contacts offer ultra-high speed connections whilst remaining suitable for harsh environments. An ideal solution for meeting today's data requirements and encouraging further utilisation of heavy data consumption audio and video applications.

Our OcTrain® compact design ensures it can be utilised within the TT Electronics ABMP range of connectors. This ensures that even in the most extreme conditions, data integrity is maintained from one contact to the next, whether it's for the railway, defence or industrial market.

OUR ADVANTAGE

- Can be utilised alongside power and signal contacts within ABMP connectors
- Suitable for a wide range of cable jackets from 4mm to 8.1mm
- Cable assembled versions
- Interchangeable contacts



FEATURES

EN45545-2 compliant

RoHS compliant

Sealed to IP67 whilst within connector

500 mated cycles

Compatible with MIL-DTL-5015 and VG95234 style reverse bayonet ABMP connector

Suitable for 22 and 24AWG wire

Easy to install

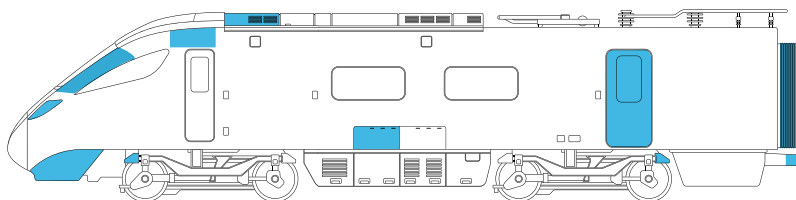
Suitable for CAT 6A and CAT7 cable

Sealed to IP67 whilst within connector

Fully tested up to 10Gb data-rates

SteadiShield®

High-Speed



TT Electronics SteadiShield® connectors are for engineers who have multiple ethernet screen requirements, within one connector. SteadiShield® connectors have a metalised insert that provides instant screen termination within a common ground.

Unlike traditional braid and clamp solutions, SteadiShield® provides improved reliability and a simplified termination process which reduces the assembly-time.

OUR ADVANTAGE

- Versatile connector consolidating up to seven high-speed ethernet contacts in one or many combinations of signal contacts
- Design capability to customise standard products
- Alternative plating materials
- Cable assembled versions
- Interchangeable contacts



FEATURES

360° Screening with no additional components required

Multiple keying options

EN45545-2 compliant

RoHS compliant

Sealed to IP67

500 mated cycles

MIL-DTL-5015 & VG95234 style reverse bayonet connector

5 styles of multi-pole contact available: Co-ax, Twn-ax, Tri-ax, Quadrax and 10Gb ethernet - OcTrain®

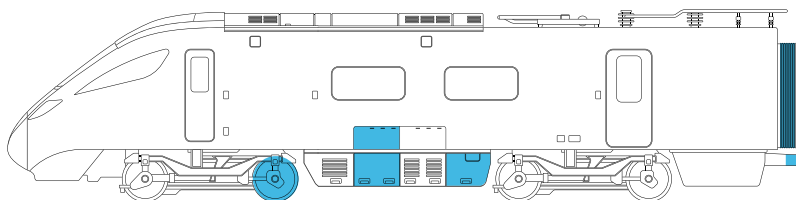
MECHANICAL FEATURES

Coupling:

Three pin reverse bayonet

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.



STANDARD MATERIALS & FINISHES

Shell:	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

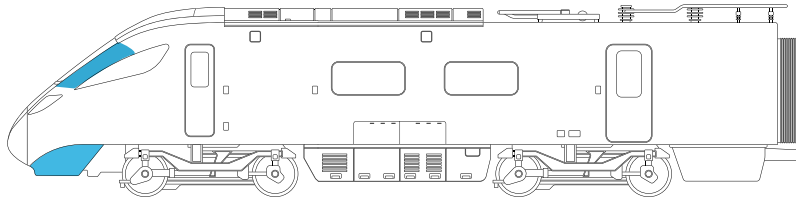
Contact type:	Crimp or threaded
Temperature Rating:	-55°C to +150°C

ELECTRICAL DATA

Current rating:	300 – 600 – 1000 Amp
Voltage:	3,600 Vac or dc peak
Contact Resistance:	0.06mΩ [NFF61-030]

CAAU

Cab Audible Alarm Unit



In the complex environment of the train cab the CAAU device provides the driver with secure centralised audio alerts from a range of different train security systems including TCMS and ATP.

The CAAU has been developed in conjunction with key customers and has been designed to be hardware programmable, overcoming the complexities of testing similar software driven devices. The alarm is factory-configurable with a wide range of complex sounds to customer's specific requirements and features built-in ambient noise compensation to counter background noise sub-300 Hz.

The CAAU operates from a dual train DC supply of 110 Vdc nominal, with dual independent, galvanically-isolated channels. Additional features include programmable volumes and frequency outputs with a sound pressure level up to 90 dB(A) at 1m and an output frequency range from 300 Hz to 6 kHz. Devices are operational from -15°C up to +75°C and meet IP65 rating standards.



OUR ADVANTAGE

- IPC/WHMA-A-620 qualified operators
- In-house design and testing facilities, complimented by additional TT Electronics test facilities.
- 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

AB CONNECTORS – DIRECT CROSS-REFERENCE RAIL PRODUCTS

Supplier	Part Number Series	Supplier	Part Number Series
 ITT	VBN		ABCIRP
 ITT	(FR) CIR		ABCIRH
 TE	SRC		ABCIRP
 SOURIAU-SUNBANK Connection Technologies	VGE1		ABCIRP
 SPACECRAFT COMPONENTS CORP.	SCPB		ABCIRH
 Glenair	(FR) ITS		ABCIRH
 Glenair	(FR) ITH		ABCIRP
Amphenol®	GT	 TT Electronics	ABCIRP
Amphenol®	APRB	 ab Connectors	ABCIRH
Amphenol®	ACA-B		ABCIRP
Amphenol®	97B		ABCIRH
 VanSystem	KVBS		ABCIRP
 VanSystem	CVBS		ABCIRH
 GIMOTA	GB		ABCIRH

RAIL APPROVALS

As a Long-term Supplier To The Rail Industry, TT Electronics Has Acquired Approval Of:

- EN45545 HL3 R22/R23 : Railway Standard For Fire Safety
- Fire Barrier Testing In Accordance With EN45545-3 EN1363.BS476
- BS EN61373 Cat 2: Shock And Vibration : Bogie Mount
- NFPA130 Standard For Fixed Guideway Transit And Passenger Rail Systems For North America
- NFF-61-030 Railway Rolling Stock. Electrical Connectors For France





PRODUCT GUIDE

RAIL SOLUTIONS

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