ABCIRP Signal/High Speed Data Connector

TT electronics
AB Connectors

Modular Bayonet Lock Connector, Plastic Insulator, Multi-pole signal contacts.

- **Traction & Industrial**
- **Mil-DTL-5015 & VG95234 Style**
- **Reverse Bayonet Connector**
- **Low fire hazard materials**

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.

Standard Materials & Finishes

Shell:	Aluminium alloy, Cadmium free plated, black passivation
Insulators:	Low fire hazard thermo plastic
Contacts:	Copper Alloy, gold plated. Co-ax, Twin-ax, Tri-ax, Quadrax

Mechanical Features

Coupling:	Three pin Bayonet Lock
Polarisation:	Shell key/keyway in removable insulator
Contact type:	Crimp, multi-pole signal, Sandwich retention
Contact Arrangements:	1 to 7 way
Endurance:	Minimum 2000 mating/unmating operations in any connector
Shock & Vibration:	BSEN61373 Cat 1. Class A.
Contact Retention:	Minimum 200N

Electrical Data

Voltage Proof:	500v DC/AC peak
Contact Resistance:	<5m ohms, less than 10 ohms after conditioning
Dielectric withstanding voltage:	Sea level = 500 Vrms between signal contacts and signal contact/body
Insulation Resistance:	at ambient temperature >5000m ohms, at high temperature >1000m ohms

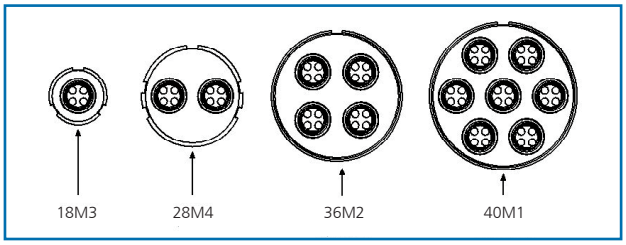
Note: Suitable for data transmission @ 100 Base-Tx on Cat 5e: Single Quadrax
Suitable for data transmission @ 1000 Base-T on Cat 5e: 2 x Quadrax

Environmental Features

Temperature Rating:	-55°C to +125°C
Sealing:	IP67
Salt Spray:	500hrs in a sealed connector

Contact Arrangements

The diagram shows quadrax contacts but theses can be substituted for any combination multi-pole contact.



General Note
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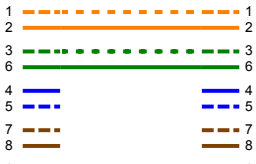
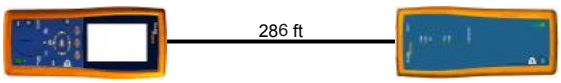
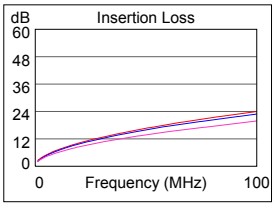
Quadrax test results for 100 Base-Tx @85m

Wire Map (Ethernet Two-Pair)
PASS

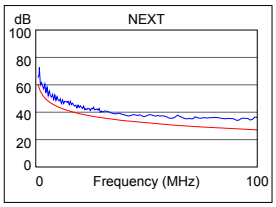


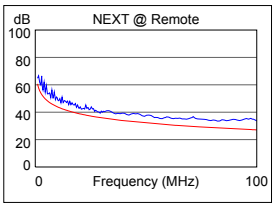


Length (ft), Limit 328	[Pair 36]	286
Prop. Delay (ns)	[Pair 12]	440
Delay Skew (ns)	[Pair 12]	18
Resistance (ohms)	[Pair 12]	14.1
Impedance (ohms)	[Pair 36]	100
Insertion Loss Margin (dB)	[Pair 12]	1.1
Frequency (MHz)	[Pair 12]	100.0
Limit (dB)	[Pair 12]	24.0



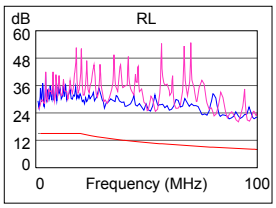
	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	12-36	12-36	12-36	12-36
NEXT (dB)	3.5	3.1	6.2	4.9
Freq. (MHz)	11.6	29.1	90.8	82.5
Limit (dB)	42.8	36.1	27.8	28.5

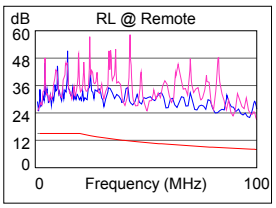




PASS	MAIN	SR	MAIN	SR
Worst Pair	36	12	36	36
RL (dB)	11.5	10.5	11.5	12.9
Freq. (MHz)	91.0	2.8	91.0	100.0
Limit (dB)	8.4	15.0	8.4	8.0

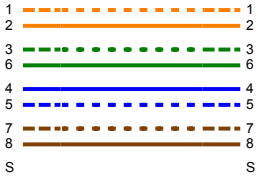
Compliant Network Standards:
10BASE-T 100BASE-TX

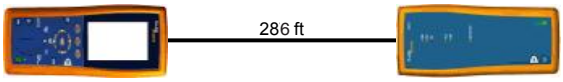




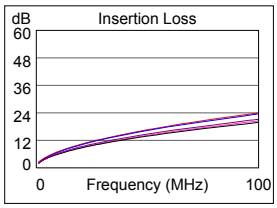
Quadrax test results for 1000 Base-T @85m

Wire Map (T568B)
PASS

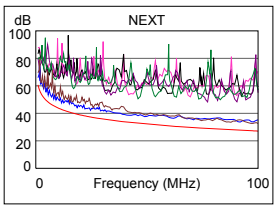


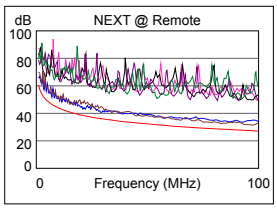


Length (ft), Limit 328	[Pair 36]	286
Prop. Delay (ns), Limit 570		440
Delay Skew (ns), Limit 50		18
Resistance (ohms)	[Pair 12]	14.4
Impedance (ohms)	[Pair 36]	100
Insertion Loss Margin (dB)	[Pair 12]	0.5
Frequency (MHz)	[Pair 12]	100.0
Limit (dB)	[Pair 12]	24.0

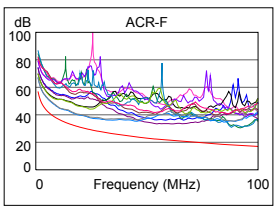


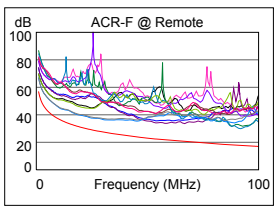
	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	12-36	45-78	45-78	45-78
NEXT (dB)	4.7	4.0	5.1	4.1
Freq. (MHz)	6.9	83.0	97.3	97.3
Limit (dB)	46.6	28.5	27.3	27.3





PASS	MAIN	SR	MAIN	SR
Worst Pair	45-78	45-78	36-45	45-36
ACR-F (dB)	8.2	8.2	12.8	12.2
Freq. (MHz)	10.5	10.5	91.8	91.8
Limit (dB)	36.6	36.6	17.7	17.7
Worst Pair	78	78	45	45
PS ACR-F (dB)	9.8	10.1	14.2	13.9
Freq. (MHz)	10.1	9.4	91.8	88.3
Limit (dB)	34.3	35.0	15.1	15.5

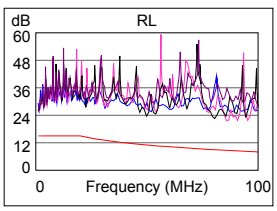


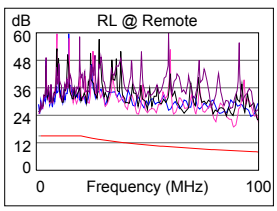


PASS	MAIN	SR	MAIN	SR
Worst Pair	45	36	36	36
RL (dB)	11.8	10.2	12.3	10.2
Freq. (MHz)	3.8	89.0	86.3	89.0
Limit (dB)	15.0	8.5	8.7	8.5

Compliant Network Standards:

10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	





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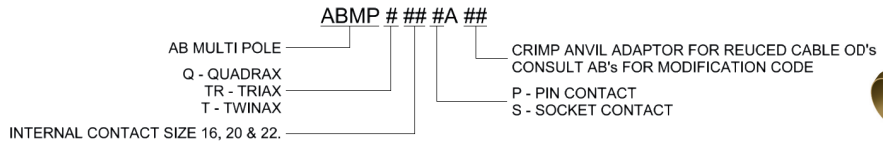
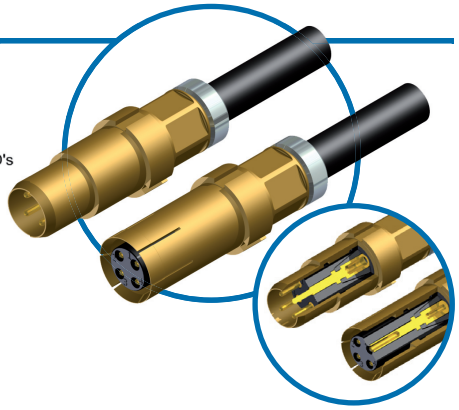
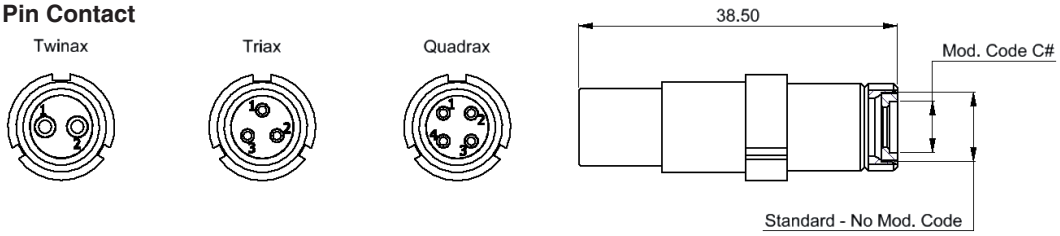
Crimped Contact Assemblies Part Number Key



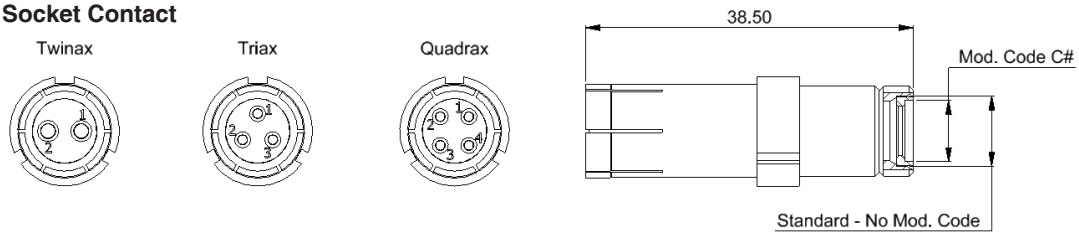


NOTE: Crimp anvil adapter for use on Quadrax and Twinax assemblies only.

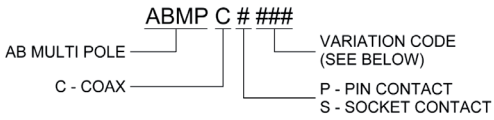
Pin Contact



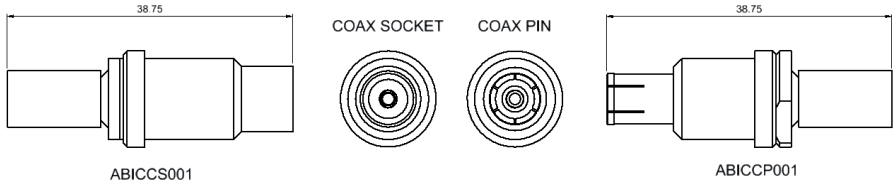
Socket Contact



Coax Assembly Part Number Key



Coax Socket and Pin



Variation Table

Part Number	Impedence (OHMS)	Cable Type
ABMP C # 001	50	LMR240

Note:
AB Connectors currently supply the contact as variant 001 suitable for the cable stated.
For ant other impedence or cable variation, please consult the factory for details.

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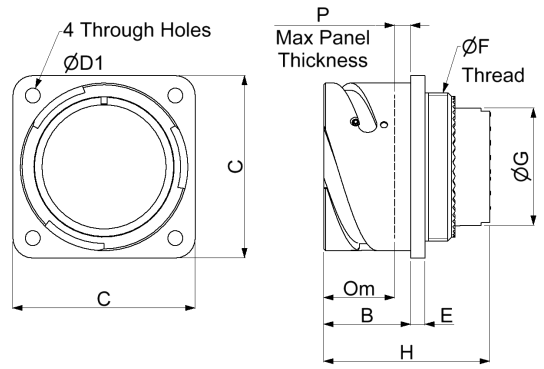
Panel mounted receptacle can be used for front or rear mounting

ABCIRP**/**

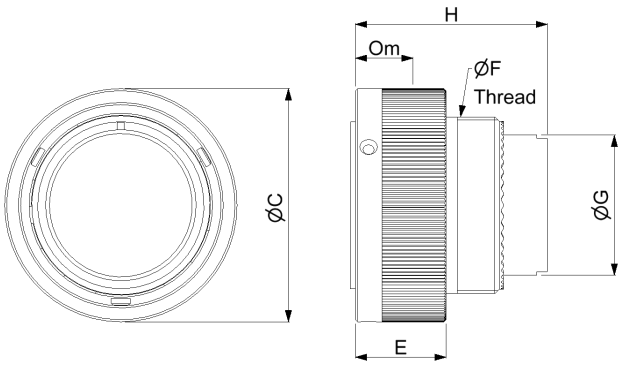


Note:
Maximum panel thickness when using cap head screws.
When using countersunk screws, maximum panel thickness = 7.5mm.

Shell Size	ØF Thread Class 2A	B Max	C Max	Ød1 +0,2-0	Threaded Holes (MOD CODE M6)	E Max	ØG	H	P see note	Om Min Overlap Mated
18	1″ x 20 UNEF	23.45	35.30	3.20	M3	4.20	18.30	46.25	3.30	15.85
28	$1^{5/8}$″ x 18 UNEF	24.45	51.10	3.70	M5		32.50			15.75
36	$2^{1/16}$″ x 16 UNS		63.80	4.30			42.50			
40	$2^{5/16}$″ x 16 UN		70.20				48.50			

Plug connector (style 'T' less accessories)

PART NUMBER ABCIRPSE06T****



Note:
All plug connectors are EMI/RFI versions.

Shell Size	C Max	E Max	ØF Thread Class 2A	ØG	H	Om Min Overlap Mated
18	37.30	24.00	1″ x 20 UNEF	18.30	46.25	15.85
28	54.50		$1^{5/8}$″ x 18 UNEF	32.50		15.75
36	68.00	27.00	$2^{1/16}$″ x 16 UNS	42.50		
40	74.00		$2^{5/16}$″ x 16 UN	48.50		

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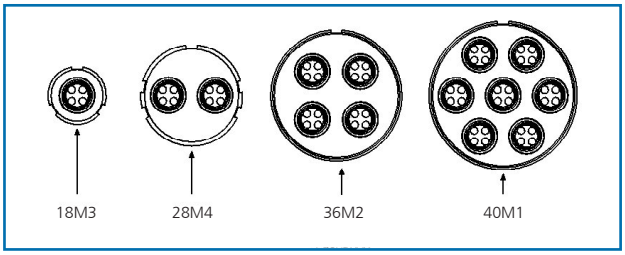
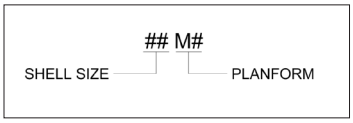
Example of how a complete connector part number is generated from sub-assemblies

Basic Series:		**ABCIRP**	**03**	**T**	28M4	**G**	**P**	**M****	**VO**	*****
Shell style:	03 : 4 hole square flange (pg 2). SE06 : plug with RFI grounding (pg 2). Refer to ABCIRP catalogue for shell options.									
Accessory type:	T : no accessory. Refer to ABCIRP catalogue for other options.									
Insert Arrangement	18M3, 28M4, 36M2, 40M1. (See images below).									
Grommet:	BLANK : no grommet. G : grommet.									
Contact Type:	P : Pin. S : Socket.									
Modification code:	BLANK : standard. M** : consult factory for details.									
VO:	VO : without contacts. (Contacts to be chosen separately)									
Insulator Orientation:	N : normal. W, X, Y, Z : alternative orientations.									



Multipole Insert Number Key



Typical part numbers for connector:

Without Accs. - ABCIRP/SE06/T/28M4/S/VO/N
Without Contacts - ABCIRP/03/T/18M3/P/VO/N

Note:
Multipole inserts are not SNCF Approved.

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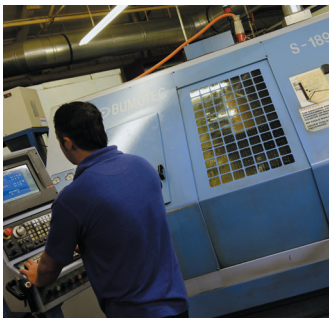
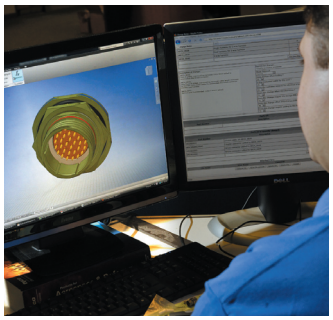
About AB Connectors

TT electronics AB Connectors Ltd is a recognised world leader in interconnection systems and harness design test and manufacture for the toughest environmental conditions. With a commitment to a structured new product introduction process, AB Connectors is investing in research and development of new materials and processes, surface treatments and the very latest manufacturing technology and techniques to ensure its products meet the most exacting standards encountered in the transportation, military, and aerospace markets. Quality systems and approvals include ISO9001 and ISO14001 along with a variety of product and market sector approvals including the military Mil-std 790.



About TT electronics plc

TT electronics plc is a focused, global electronics group supplying leading manufacturers in the defence, aerospace, medical, transportation and industrial markets. The Group consists of five divisions: Components, Sensors, Secure Power, Integrated Manufacturing Services and General Industrial each delivering technology, products and services to customers in target markets worldwide. TT electronics plc operates from headquarters based in Weybridge, Surrey, with more than 20 global manufacturing locations and more than 6,000 employees worldwide.

Additional information is available from our corporate website: http://www.ttelectronics.com

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