Amphenol

MIL-STD-1553B Data Bus

Couplers and Interconnect Systems



MIL-STD 1553B

- In-Line Couplers to PAN6465/JN1042 and JN1052
- R.T. Connector Coupler
- R.T. Multiway Connector Couplers
- Loom Assemblies using In-Line Couplers
- Cable Assemblies for Connector Coupled Systems
- Customised Coupler Boxes

Amphenol

Description

A wide range of R.T. Couplers providing transformer coupling between MIL-STD-1553 Def Stan 00-18 (Part 2) Data Bus and Single, Dual or Multiple Remote Terminals (RT). Coupling transformers and associated isolation resistors are contained in a continuous shield providing electro-magnetic and environmental shielding. Transformers used in the range of R.T. Couplers are fully compliant with the requirement of MIL-STD-1553B clauses 4.5.1.5.1.1. to 4.5.1.5.1.1.3, in respect of turns ratio, input impedance, waveform integrity and common mode rejection.

Transformers used are compatible with currently available transceivers and meet all

electrical requirements of Manchester Series II serial bi-phase data transmission, and are designed to meet the requirements of MIL-T-21038 Grades 5 and 7/Class S/Life X.

Amphenol provide a wide range of R.T. Couplers designed to meet the requirements of a large number of users. R.T. Couplers fitted with flying leads (e.g. 711-6116) are used where space and weight restrictions are critical, such as aircraft. R.T. Can Couplers are used in panels and control boxes where multiple couplers are required in a small area.

Electrical Characteristics

Transformer turns ratio $1:\sqrt{2}$.

Series resistors 57ohms.

Characteristic Impedance 77.05ohms. R.T. Coupler units with alternative transformer characteristics to suit particular bus impedances are available.

The wide range of R.T. Couplers are compliant with MIL-STD-1553B clauses 4.5.1.5.1.2 and 4.5.1.5.1.4 in respect of fault isolation, cable coupling, shielding coverage, signal waveform, frequency and modulation.

Operating Conditions

Ambient temperature range -55° C to 125° C (3Kohms minimum impedance at 55° C)

R.T. Couplers – connector coupling are used in prototype or test harnesses where adaptability is required but space and weight are not major considerations. The ruggedised R.T. coupler has been designed for military applications such as fighting vehicles where robustness and intermateability with military connectors are required. The coupler mates with 38999 Series III and utilises Amphenol Ltds size 8 data bus contacts. Amphenol Ltd provides a full design and manufacturing facility and can supply inter-connection systems for specialised customer requirements



Applicable Specifications

R.T. Couplers are designed to conform to the following documents:

- MIL-STD-1553B Material Time Division Command / Response Multiplexed Data Bus
- MIL-STD-4546 Standard General Requirements for Electronic Equipment
- MIL-STD-810C Environmental Test Methods
- MIL-E-6051 Electromagnetic Compatibility Requirements Defence Standard 18 (Part 2) Avionics

Data Transmission Interface System

- BS9522 F0042 Single Way Data Bus Connectors
- BS9522 F0043 Multi Way Data Bus Connectors



711 Series Multiway R.T. Can Couplers

Multiway Flange Mtg. Coupler Receptacle – 02AC/JN1168BC





Shell Size	Bi ±0.38 (±0.015)	C Sq Max	D₁ dia. ±0.05 (±.002)	D₂ dia. ±0.13 (±.005)	E ±0.41 (±.016)	F Max	M₁ dia. Max	P Max.	V Min.	W dia. ±0.13 (±.005)	X Sq. ±0.13 (±.005)
14	11.33	28.98	3.18	3.25	1.57	49.00	22.25	2.21	33.15	25.12	23.01
	(0.446)	(1.141)	(0.125)	(0.128)	(0.062)	(1.929)	(0.876)	(0.087)	(1.305)	(0.989)	(0.906)
16	11.33	31.34	3.18	3.25	1.57	57.00	25.43	2.21	37.85	28.27	24.61
	(0.446)	(1.234)	(0.125)	(0.128)	(0.062)	(2.244)	(1.001)	(0.087)	(1.490)	(1.113)	(0.969)
18	11.33	33.73	3.18	3.25	1.57	60.00	28.60	2.21	40.64	31.45	26.97
	(0.446)	(1.328)	(0.125)	(0.128)	(0.062)	(2.362)	(1.126)	(0.087)	(1.600)	(1.238)	(1.062)
20	14.50	36.91	3.18	3.25	2.39	64.00	31.78	5.38	43.81	34.62	29.36
	(0.571)	(1.453)	(0.125)	(0.128)	(0.094)	(2.520)	(1.251)	(0.212)	(1.725)	(1.363)	(1.156)
22	14.50	40.08	3.18	3.25	2.39	64.00	34.95	5.38	46.61	37.80	31.75
	(0.571)	(1.578)	(0.125)	(0.128)	(0.094)	(2.520)	(1.376)	(0.212)	(1.835)	(1.488)	(1.250)
24	15.37	43.26	3.86	3.94	2.39	64.50	38.13	5.38	49.78	41.02	34.92
	(0.605)	(1.703)	(0.152)	(0.155)	(0.094)	(2.539)	(1.501)	(0.212)	(1.960)	(1.615)	(1.375)

Multiway Single Hole Mtg. Coupler Receptacle – 03AC/JN1168AC







PANEL PIERCING

Shell	B Max.	D Sq.	E Max.	F Max.	K A/F Max.	M Max. dia.	P Panel Thickness		V Min	W dia	Z ₁	Z ₁
Size							Max.	Min.	v win.	±0.13 (±.005)	±0.13 (±.005)	±0.13 (±.005)
14	17.96	35.33	2.87	49.00	30.61	22.25	4.75	1.57	36.82	25.65	23.80	24.08
	(0.707)	(1.391)	(0.113)	(1.929)	(1.205)	(0.876)	(0.187)	(0.062)	(1.430)	(1.010)	(0.937)	(0.948)
16	17.96	38.51	2.87	57.00	33.76	25.43	4.75	1.57	39.88	28.83	26.95	27.23
	(0.707)	(1.516)	(0.113)	(2.244)	(1.329)	(1.001)	(0.187)	(0.062)	(1.570)	(1.135)	(1.061)	(1.072)
18	17.96	41.68	2.87	66.50	36.96	28.60	4.75	1.57	43.69	32.00	30.12	30.40
	(0.707)	(1.641)	(0.113)	(2.618)	(1.455)	(1.126)	(0.187)	(0.062)	(1.720)	(1.260)	(1.186)	(1.197)
20	19.61	46.43	3.76	69.00	40.11	31.78	6.35	1.57	47.37	35.18	33.30	33.58
	(0.772)	(1.828)	(0.148)	(2.716)	(1.579)	(1.251)	(0.250)	(0.062)	(1.865)	(1.385)	(1.311)	(1.322)
22	19.61	49.63	3.76	69.00	43.31	34.95	6.35	1.57	50.93	38.35	36.47	36.75
	(0.772)	(1.954)	(0.148)	(2.716)	(1.705)	(1.376)	(0.250)	(0.062)	(2.005)	(1.510)	(1.436)	(1.447)
24	19.61	52.78	3.76	69.00	46.46	38.13	5.56	1.57	54.61	41.53	39.65	39.93
	(0.772)	(2.078)	(3.76)	(2.716)	(1.829)	(1.501)	(0.219)	(0.062)	(2.150)	(1.635)	(1.561)	(1.572)

<section-header>Jutiway Insert Circuit ConfigurationsCircuit consector sources of Front (Mating) Surface of Pin InsertsImage: Circuit ConfigurationsImage: Circuit Configurations

Technical Data

Standard product available as shown. Planforms up to 24-12 can be supplied to customer specification. 711 Series R.T. Can Couplers have been designed to give a larger coupler capability in a small package. They utilise the design concepts of Amphenol Ltd's widely accepted and proven 711 series Multiway connectors.

Features Include:

- Qualified to Eurofighter Specification J64.520 (JN1168)
- Complies with the requirements of MIL-STD-1553B
- Utilises ceramic substrate technology
- Compact design
- Fully potted for sealing purposes and rigidity
- Box or panel mounted
- Intermateable with Amphenol Ltd 711 Multiway connectors
- EMI screened

711 Series R.T. Couplers

Single R T	Counter	Boyes	Connector	Counling
Single K.L.	Coupler	DUXE3,	Connector	Couping



STUB

_1.156 _

 \oplus

2 HOLES

Ø.177 (4.50)



3 711-5008 CONNECTORS

TV99 Ruggedised R.T. Couplers



Technical Data

The Ruggedised R.T. Coupler is designed for use in fighting vehicles and other military uses where robustness and intermateability with military style connectors is required.

Features Include:

- Complies with the requirements of MIL-STD-1553B
- Olive drab plating as standard
- Robust design
- Intermateable with MIL-C-38999 Series III connectors
- Utilises Amphenol Ltd size 8 Data Bus contacts (Intermateable with M39029/90 and M39029/91 contacts)
- EMI Screened

Ordering Information



711 Series R.T. Couplers

R.T. Couplers, Flying Lead Termination





Technical Data

The 711-6000-X and 711-6001-X R.T. Couplers conform to the requirements of MIL-STD-1553B.

Features Include:

- Fully adaptable using Amphenol Ltd range of 711 Series connectors
- Box or wall mounting
- Robust design
- EMI Screened

Ordering Information



711/715 Series R.T. Couplers

Multi R.T. Coupler Boxes, Connector Coupling



Technical Data

Amphenol Ltd produce a range of connector coupling R.T. boxes. These range from single R.T. Couplers to 5-Stub bus terminating devices.

Features Include

- Complies to the requirements of MIL-STD-1553B.
- Wall mounted, robust design.
- Adaptable for use in prototype and test looms.
- Fully intermateable with Amphenol Ltd 711 series single or multiway connectors
- Fully potted for sealing purposes and rigidity

In Line Mechanical Splice



Features Include:

- Provides a low cost repair solution
- Utilises standard #10 Data Bus crimp contacts
- Uses standard tooling
- Environmentally Sealed

Ordering Information:

Part Number 711-5034 (462)



Notice: Products are sold subject to Amphenol's conditions of sale ("the standard conditions"). All specifications and statements contained herein are believed to be correct at the time of printing but no representation or warranty, express or implied, is given as to any specification or statement contained herein. Product specifications including performance characteristics are typical only and subject to deviation. Specifications are also subject to change without notice. Users should not assume that all safety measures are indicated or that other measures may not be required. No representation or warranty, express or implied, is given that any use of products (including any stated or suggested use) does not infringe any patent, registered design or other third party rights and no stated or suggested use of products can be taken to recommend any such infringement.



Thanet Way, Whitstable, Kent. CT5 3JF Tel: 01227 773200 Fax: 01227 276571