MIL-STD-1553B Data Bus
Couplers and Interconnect Systems

Mil Std 1553B
In-line Couplers to PAN6465
R.T. Connector Coupler
R.T. Multiway Connector Couplers
Loom Assemblies using In-line Couplers
Cable Assemblies for Connector Coupled systems
Customised Coupler Boxes
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-15538 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 & 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:√2.
Series resistors 57 ohms.
Characteristic impedance 77.5ohms.
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 MILSTD-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. (3K ohms 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 Ltd's size 8 data-bus contacts. Amphenol Ltd provides a full design and manufacturing facility and can supply interconnection systems for specialised customer requirements.

Applicable Specifications

R.T. Couplers: The 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.
In-Line Couplers

Single Stub
Double Stub

BUS 711-6116-XX
BUS STUB
BUS STUB
BUS STUB
BUS
711-6021-XX

Technical Data
The 711-6116-XX Single Stub R.T. coupler is approved to PAN 6465. The dual stub coupler conforms to the electrical and environmental requirements of PAN 6465.

Features include:
- Complies with the requirements of MIL-STD-1553B.
- Fully environmentally sealed.
- Fully adaptable using Amphenol Ltd's range of 711 series connectors.
- Can be manufactured into complex multi-coupler looms up to 32 stub.
- Lightweight and compact - ideal for use in aircraft systems.
- Full fluid resistance to aviation fuels, hydraulic and brake fluids, lubricants and ancilliary fluids.
- EMI screened.

Ordering Information

Cable Length (In whole metres)

711-6116-1 A

Cable specification
OMT for Pan 6421
(711 -p
A -10613
B - EPD 29474 D)
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

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<th>Cable Length (In whole metres)</th>
<th>711-600X-A</th>
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Cable Specification
OMT for PAN 6421 (711-6421)
A - 10613
B - EPD 29474D
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-15538.
• 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

TV99 - 6002 - X - X X

- Series
- Style
- Shell Orientation
  - N - Normal (A,B)
- Contact Type
  - S - Female
  - P - Male
- Cable Lengths (in whole)
### 711 Series Multiway R.T. Can Couplers

**Multi Way Flange Mtg. Coupler Receptacle - 02AC**

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<th>M, dia. max.</th>
<th>P max.</th>
<th>V min.</th>
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**Multi Way Single Hole Mtg. Coupler Receptacle - 03AC**

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Inches [Metric] mm
Multi Way Insert Circuit Configurations

Lettering of inserts shown here corresponds to views of front (mating) surface of pin inserts.

Technical Data

Standard product available as shown. Plan forms up to 24-12 can be supplied to customer specification. 711 Series R.T. Can Couplers have been designed to give a large coupler capability in a small package. They utilise the design concepts of Amphenol Ltd widely accepted and proven 711 series Multiway connectors.

Features include:
- Qualified to Eurofighter Specification J64.513 (JN 1056)
- Complies with the requirements of MIL-STD-1553B.
- Utilises P.C.B. technology.
- Compact design.
- Fully potted for sealine purposes and rigidity.
- Box or panel mounted.
- Intermateable with Amphenol Ltd 711 Multiway connectors.
- EMI screened.

Ordering Information

711 - O2AC14 - 3P C

- Shell Size
- Connector Orientations
- Contact Arrangement
711 Series R.T. Couplers
Single R.T. Coupler Boxes, Connector Coupling

711-6007-XX Series 711 Bayonet Circular Coupling

711-6008-XX Series 711 Threaded Connector Coupling

Dual R.T. Coupler Boxes, Connector Coupling

711-6009-XX Series 711 Threaded Connector Coupling
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. coupler boxes. These range from single R.T. couplers to 5-stub bus terminating devices.

Features include:
- Complies to the requirements of MIL-STD-1553.
- 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.

Ordering Information
Ordering Information
711 Series Multiway R.T. Can Coupler Connectors

711-02A  C  14 . 3   P   C

Series Designation
Shell Style
02A- Square Flange Mounting
03A- Single Hole Mounting
C - Denotes R.T. Coupler

Connector Orientation (Omit for normal)
Contact Style
P - Pins only
Number of Contacts
3:4:6:8:10:12

711/715 Series Single, Dual and Multi Stub R.T. Couplers

711 – 6008 - xx

Series Designation
711 715

Deviation Codes Refer to Pages 5, 7 and 9 for explanation of deviation codes
Page 5 - Deviation Codes applicable to specialist R.T. Couplers
Page 7 - Applicable for connector coupling only
Page 9 - Applicable for cable coupling only

Style Reference
711-6000 Single FIT. - flying lead termination Page 8
711-6001 Dual R.T. - flying lead termination Page 8
711-6006 In Line Single R.T. to Pan 6465 Page 9
711-6007 Single R.T. - 711 Series Bayonet Coupling Page 6
711-6008 Single R.T. - 711 Series Threaded Coupling Page 6
711-6009 Dual R.T. - 711 Series Threaded Coupling Page 6
711-6010 Multi Stub R.T. Page 5
711-6011 In Line Dual R.T. Page 9
711-6012 In Line Single R.T. to Pan 6465 (Consult Amphenol) Page 5
715-5013 Dual R.T. - hybrid terminations Page 5
715-5014 Dual R.T. - 715 Series Threaded Coupling Page 7
715-5018 Single R.T. - 715 Series Threaded Coupling Page 7

Single, Dual and Multi Stub R.T. Couplers are available for connection to Data Highways. Amphenol's capability extends to the design, development and manufacture of R.T. Coupler Units to meet any specific customer requirement. For further information please consult Amphenol Products.