

Microcouplers

Compact, in-line, splice-terminated data bus microcouplers, feature lightweight design that meet the MIL-STD-1553B requirements for hardware configuration and performance. The low-profile configuration enables avionics system designers to plan for optimum coupler locations.

Tyco Electronics data bus microcouplers are qualified to Raychem Specification D-6020, European Specification EN-3567, and are specified in the Air Force drawings listed in 8340707. Standard products are supplied with Raychem SPEC 55 data bus cables, including EMP-hardened versions.

All of these products are available assembled with other components into a complete data bus harness without splices.

The Raychem data bus microcoupler features:

- Environmental sealing
- No connectors
- Very small size, light weight
 - 1 stub: 10 g (max.)
 - 2 stub: 15 g (max.)
 - (Lighter weight versions are available)
- In-line profile to enable wire bundle mounting
- 360° continuous low-impedance cable shield terminations
- Reliable solder termination of all components
- Potted circuit elements for maximum durability and in-use reliability
- Ease of installation
- Altitude immersion resistance
- Optional eyelet configurations for bulkhead mounting
- MTBF > 1,000,000 hours.
- 150°C temperature rating

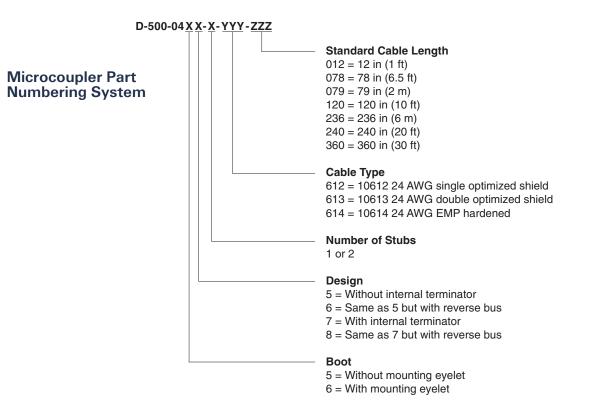


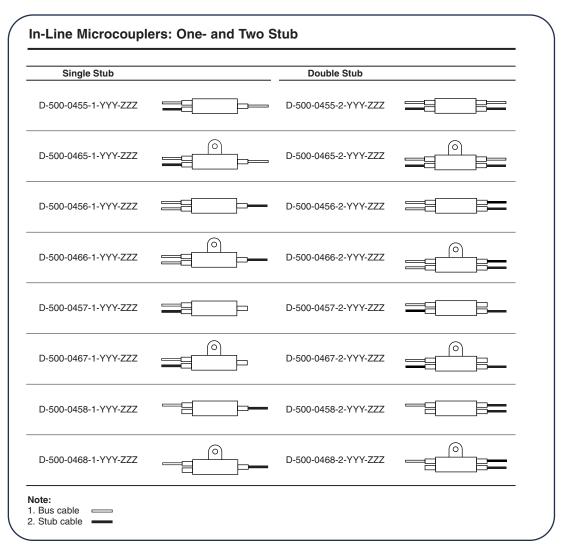






Data Bus Components





Ultra Lightweight In-Line Microcouplers I- through 6- Stub



Applications

Building on over 20 years of experience and continuous improvement in data bus, including pioneering in-line microcouplers, Tyco Electronics introduces a new family of ultra light- weight in-line Raychem Microcouplers, available in 1- through 6-stub configurations.

These couplers offer the same high performance and reliability as Raychem current microcouplers, but their weight is further reduced. They are available in configurations up to 6-stub. There is no option with a mounting eyelet.

Combined with Raychem 24 AWG data bus cables, these ultra light couplers allow designers to significantly reduce weight. An unfilled flat braid cable is available for additional weight savings.

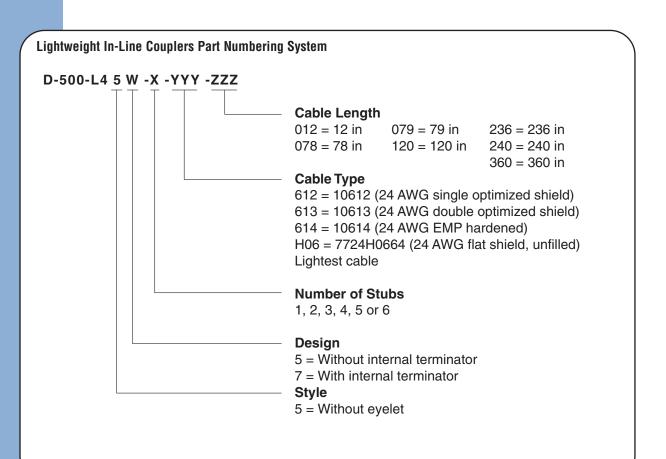
They are also available assembled with other customer specified components into a complete factory-built and tested data bus harness.

Specifications/approvals

Series	Military	Raychem
D-500-L4xx	MIL-STD-1553B	D-6020 (same as current microcouplers)



Ultra Lightweight In-Line Microcouplers I- through 6- Stub



Ultra Lightweight In-Line Microcouplers I- through 6- Stub

D-500-L455-X-YYY-ZZZ End View End View			D-500-L456 End View	-X-YYY-ZZZ	End View
Left Side		Right Side	Left Side		Right Side
	1 stub	\bigcirc	0	1 stub	
	2 stub			2 stub	
	3 stub			3 stub	
	4 stub			4 stub	
	5 stub			5 stub	
	6 stub			6 stub	

End View Left Side	1 stub	End View Right Side
	1 stub	
\bigcirc	2 stub	
	3 stub	
	4 stub	
	5 stub	
	6 stub	

Legend Bus cable = Stub cable •

Data Bus Box Couplers, I- to 8- stub



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Raychem brand data bus box couplers provide lightweight, robust coupler modules with connector versatility.

Up to eight stub connectors can be arrayed on the "face" of the box coupler. The bus connectors can also be on the "face" or on the "side" of the box.

Designed with Raychem brand D-621 series corrosion-resistant threaded or bayonet-type connectors. Box couplers are qualified to Raychem Specification D-6021.

Coupler Type	Part No.					
coupler type	Threaded	Bayonet A*	Bayonet B*	Bayonet C*		
Face - 1 Stub	D-500-0255-511-1	D-500-0255-513-1	D-500-0255-515-1	D-500-0255-517		
Face - 2 Stub	D-500-0255-521-1	D-500-0255-523-1	D-500-0255-525-1	D-500-0255-527		
Face - 3 Stub	D-500-0255-531-1	D-500-0255-533-1	D-500-0255-535-1	D-500-0255-537		
Face - 4 Stub	D-500-0255-541-1	D-500-0255-543-1	D-500-0255-545-1	D-500-0255-547		
Face - 5 Stub	D-500-0255-551-1	D-500-0255-553-1	D-500-0255-555-1	D-500-0255-557		
Face - 6 Stub	D-500-0255-561-1	D-500-0255-563-1	D-500-0255-565-1	D-500-0255-567		
Face - 7 Stub	D-500-0255-571-1	D-500-0255-573-1	D-500-0255-575-1	D-500-0255-577		
Face - 8 Stub	D-500-0255-581-1	D-500-0255-583-1	D-500-0255-585-1	D-500-0255-587		
Side - 1 Stub	D-500-0255-512-1	D-500-0255-513-2	D-500-0255-515-2	D-500-0255-517		
Side - 2 Stub	D-500-0255-522-1	D-500-0255-523-2	D-500-0255-525-2	D-500-0255-527		
Side - 3 Stub	D-500-0255-532-1	D-500-0255-533-2	D-500-0255-535-2	D-500-0255-537		
Side - 4 Stub	D-500-0255-542-1	D-500-0255-543-2	D-500-0255-545-2	D-500-0255-547		
Side - 5 Stub	D-500-0255-552-1	D-500-0255-553-2	D-500-0255-555-2	D-500-0255-557		
Side - 6 Stub	D-500-0255-562-1	D-500-0255-563-2	D-500-0255-565-2	D-500-0255-567		
Side - 7 Stub	D-500-0255-572-1	D-500-0255-573-2	D-500-0255-575-2	D-500-0255-577		
Side - 8 Stub	D-500-0255-582-1	D-500-0255-583-2	D-500-0255-585-2	D-500-0255-587		

Customized data bus box couplers are available upon request.

*The bayonet polarization listed is for the bus connector. All stub connectors are Bayonet D polarization. Polarizations are depicted as follows (jack view):

3 = C

2 = B

Data Bus Cables

SPEC 55 data bus cables meet or exceed the performance requirements of MIL-STD-1553B. SPEC 55 insulation is a high-temperature, radiationcross-linked, modified ETFE material that can be used in wire constructions rated up to 200°C. This insulation is qualified to MIL-W-22759/32-/35 and 41-/46.

The cables are:

- Lightweight
- Highly flexible
- Flame-resistant
- Chemical-resistant to all known aircraft fluids
- Solder-iron-resistant

Made with optimized shielding providing three standard levels of defined EMI/EMP protection. Other shielding options and cable constructions are available.



Data Bus Discrete Connectors

Raychem Brand D-621 and DK-621 series connectors are designed specifically for MIL-STD-1553B data bus applications. In addition to utilizing Tyco Electronics heat-shrink technology, the D-621 and DK-621 series connectors also feature:

- Compliance to MIL-STD-1553B hardware requirements
- Light weight
- Removable pin or socket contacts
- Termination with Raychem MILSPEC and MIL-STD-1553B data bus cables, including EMP-hardened versions
- Continuous 360° shield coverage
- Rugged constructions
- Termination time of 1 to 2 minutes
- Inspectable solder terminations
- Low-skill assembly
- Reworkable and repairable terminations
- Strain relief built into the design
- Low voltage drop and high reliability due to precisely controlled solder terminations
- Threaded coupling, with safety wire holes and bayonet coupling styles
- Low total installed cost
- 1000-hour salt spray resistance

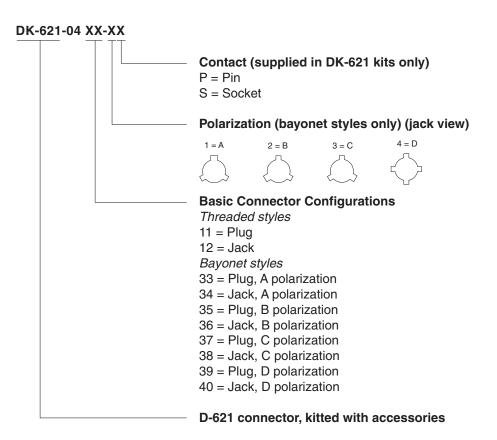




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Connector Kit Part Numbering System

Connector Kit Part Numbering System



Example:

DK-621-0434-1P = D-621 connector, kitted with accessories, jack bayonet style with A polarization and pin contact.

Triaxial Connectors for 1553B Data Bus Cable

Panel	•			•	Mate	with
Thickness	Connector	Contact	Connector Reference	Connector	77 Ohm bus Terminator	3K Ohm stub Terminator
Bayonet Conn	ectors					
Polarity A						
	Plug	Pin	DK-621-0433-1P	DK-621-0434-1S	D-621-0461(-L)	D-621-0465(-L)
	Plug	Socket	DK-621-0433-1S	DK-621-0434-1P	D-621-0477(-L)	D-621-0481(-L)
Standard	Jack	Pin	DK-621-0434-1P	DK-621-0433-1S	D-621-0469(-L)	D-621-0473(-L)
2.4mm max	Jack	Socket	DK-621-0434-1S	DK-621-0433-1P	D-621-0453(-L)	D-621-0457(-L)
Long reach	Jack	Pin	DK-621-0550-1P	DK-621-0433-1S	D-621-0469(-L)	D-621-0473(-L)
12.5mm max	Jack	Socket	DK-621-0550-1S	DK-621-0433-1P	D-621-0453(-L)	D-621-0457(-L)
Polarity B						
	Plug	Pin	DK-621-0435-2P	DK-621-0436-2S	D-621-0462(-L)	D-621-0474(-L)
	Plug	Socket	DK-621-0435-2S	DK-621-0436-2P	D-621-0478(-L)	D-621-0458(-L)
Standard	Jack	Pin	DK-621-0436-2P	DK-621-0435-2S	D-621-0470(-L)	D-621-0474(-L)
2.4mm max	Jack	Socket	DK-621-0436-2S	DK-621-0435-2P	D-621-0454(-L)	D-621-0458(-L)
Long reach	Jack	Pin	DK-621-0448-2P	DK-621-0435-2S	D-621-0470(-L)	D-621-0467(-L)
12.5mm max	Jack	Socket	DK-621-0448-2S	DK-621-0435-2P	D-621-0454(-L)	D-621-0483(-L)
Polarity C						
	Plug	Pin	DK-621-0437-3P	DK-621-0438-3S	D-621-0463(-L)	D-621-0467(-L)
	Plug	Socket	DK-621-0437-3S	DK-621-0438-3P	D-621-0479(-L)	D-621-0483(-L)
Standard	Jack	Pin	DK-621-0438-3P	DK-621-0437-3S	D-621-0471(-L)	D-621-0475(-L)
2.4mm max	Jack	Socket	DK-621-0438-3S	DK-621-0437-3P	D-621-0455(-L)	D-621-0459(-L)
Long reach	Jack	Pin	DK-621-0446-3P	DK-621-0437-3S	D-621-0471(-L)	D-621-0475(-L)
12.5mm max	Jack	Socket	DK-621-0446-3S	DK-621-0437-3P	D-621-0455(-L)	D-621-0459(-L)
Polarity D						
	Plug	Pin	DK-621-0439-4P	DK-621-0440-4S	D-621-0464(-L)	D-621-0468(-L)
	Plug	Socket	DK-621-0439-4S	DK-621-0440-4P	D-621-0480(-L)	D-621-0484(-L)
Standard	Jack	Pin	DK-621-0440-4P	DK-621-0439-4S	D-621-0472(-L)	D-621-0476(-L)
2.4mm max	Jack	Socket	DK-621-0440-4S	DK-621-0439-4P	D-621-0456(-L)	D-621-0460(-L)
Long reach	Jack	Pin	DK-621-0551-4P	DK-621-0439-4S	D-621-0472(-L)	D-621-0476(-L)
12.5mm max	Jack	Socket	DK-621-0551-4S	DK-621-0439-4P	D-621-0456(-L)	D-621-0460(-L)
Throadod Con	noctors					
Threaded Con Polarity E	nectors					
	Plug	Pin	DK-621-0411-P	DK-621-0412-S	D-621-0406(-L)	D-621-0424(-L)
	Plug	Socket	DK-621-0411-S	DK-621-0412-P	D-621-0418(-L)	D-621-0423(-L)
Standard	Jack	Pin	DK-621-0412-P	DK-621-0411-S	D-621-0415(-L)	D-621-0423(-L)
2.4mm max	Jack	Socket	DK-621-0412-S	DK-621-0411-P	D-621-0413(-L)	D-621-0407(-L)
Long reach	Jack	Pin	DK-621-0412-3	DK-621-0411-S	D-621-0415(-L)	D-621-0407(-L)
•	Jack	Socket	DK-621-0412-F	DK-621-0411-5	D-621-0413(-L)	D-621-0407(-L)
12.5mm max						

Triaxial Connectors and Terminators to European NORME EN3716 for 1553B Data Bus Cable

Panel	Connector	Contact	Connector Reference Connector	Mate with		
Thickness		Contact	Connector Reference Connector		77 Ohm bus Terminator	3K Ohm stub Terminator
	Plug	Pin	DK-3716-F101-TP	DK-621-E102-TS	D-621-E077-S	D-621-E03K-S
	Plug	Socket	DK-3716-F101-TS	DK-621-E102-TP	D-621-E077-P	D-621-E03K-F
	Plug	Pin	DK-3716-F201-TP	DK-621-E202-TS	D-621-E077-S	D-621-E03K-S
	Plug	Socket	DK-3716-F201-TS	DK-621-E202-TP	D-621-E077-P	D-621-E03K-F
	Jack	Pin	DK-3716-E102-TP	DK-621-F101-TS	D-621-F077-S	D-621-F03K-S
Standard	Jack	Socket	DK-3716-E102-TS	DK-621-F101-TP	D-621-F077-P	D-621-F03K-F
2.4mm max	Jack	Pin	DK-3716-E202-TP	DK-621-F201-TS	D-621-F077-S	D-621-F03K-S
	Jack	Socket	DK-3716-E202-TS	DK-621-F201-TP	D-621-F077-P	D-621-F03K-F
	Jack	Pin	DK-3716-E112-TP	DK-621-F101-TS	D-621-F077-S	D-621-F03K-S
Long reach	Jack	Socket	DK-3716-E112-TS	DK-621-F101-TP	D-621-F077-P	D-621-F03K-F
2.5mm max	Jack	Pin	DK-3716-E212-TP	DK-621-F201-TS	D-621-F077-S	D-621-F03K-S
	Jack	Socket	DK-3716-E212-TS	DK-621-F201-TP	D-621-F077-P	D-621-F03K-P

Panel	Commenter	Contact	Terminator Reference	Mate with		
Thickness	Connector			Standard	Long Reach	
				Connector	Connector	
	Plug	Pin	DK-3716-F077-P	DK-3716-E#02-TS	DK-3716-E#12K-TS	
77 Ohm bus	Plug	Socket	DK-3716-F077-S	DK-3716-E#02-TP	DK-3716-E#12K-TP	
terminator	Jack	Pin	DK-3716-F077-P	DK-3716-E#01-TS		
	Jack	Socket	DK-3716-F077-S	DK-3716-E#01-TP		
	Plug	Pin	DK-3716-E03K-P	DK-3716-E#02-TS	DK-3716-E#12K-TS	
3K Ohm stub terminator	Plug	Socket	DK-3716-E03K-S	DK-3716-E#02-TP	DK-3716-E#12K-TP	
	Jack	Pin	DK-3716-E03K-P	DK-3716-E#01-TS		
	Jack	Socket	DK-3716-E03K-S	DK-3716-E#01-TP		

MIL-DTL-38999-Type Triaxial Contacts for Data Bus Applications

Now, both high-density packaging and full shield coverage are available with a simple, quick and reliable termination system. AWG24 twisted-pair data bus cables are terminated to triaxial SolderTacts contacts, which fit size 8 cavities of MIL-DTL-38999, Series I, III, or IV connectors.

Raychem brand triaxial 38999-type data bus contacts deliver the signals with:

- One-step termination
- Termination time of 1 to 2 minutes
- No needed special termination tools
- No requirements for special skills
- Reworkable and repairable terminations
- Strain relief that is built into the design
- Continuous 360° shield coverage
- Triaxial mating face for least susceptibility to damage
- Rugged construction
- Inspectable solder terminations
- Low voltage drop and high reliability due to precisely controlled solder termination.

Raychem size 8 triaxial data bus contacts for MIL-DTL-38999 connectors have interfaces that comply with MIL-C-39029/90 and /91 to provide intermatability with crimp contacts.

These contacts provide a fast and convenient method of implementing MIL-STD-1553B connections in MIL-STD-1760 applications.



Raychen

MIL-DTL-38999-Type Triaxial Contacts for Data Bus Applications

Specifications/Approval

Series	Raychem	
Size 8	D-6002	

Product Selection

Cable Type	Pin	Socket
10612	DK-602-0156-N-1	DK-602-0157-N-1
10613	DK-602-0156-N-2	DK-602-0157-N-2
10614	DK-602-0156-N-3	DK-602-0157-N-3



Data Bus Accessories



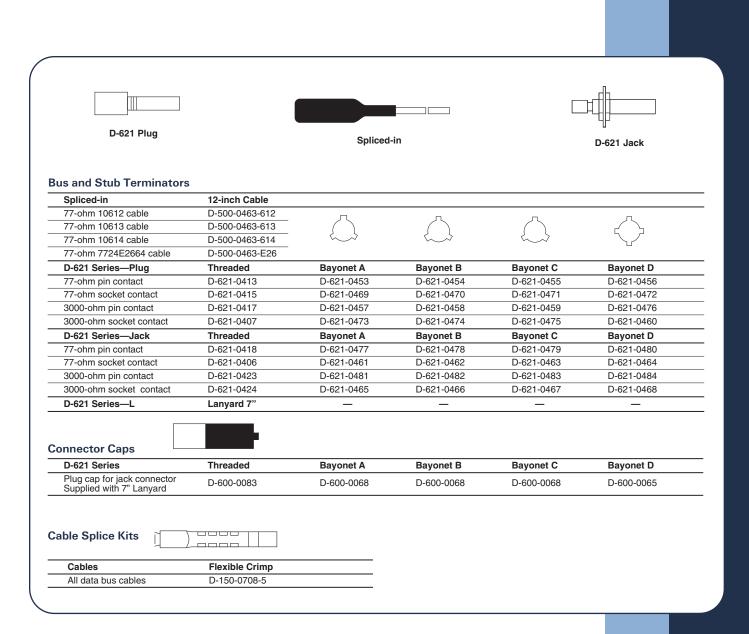
Tyco Electronics manufactures all the Raychem products needed to build a MIL-STD-1553B data bus network. In addition to the main components the following accessory components that may be necessary to complete a data bus system are also available:

- Bus and stub terminators spliced-in and connectorized (D-621 series)
- Cable splice kits
- EMI/environment-resistant connector caps
- Braid terminators and strain relief tubing for rework applications









support services





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