







The full line of Raychem data bus products offers a complete system of interconnection hardware for all MIL-STD-1553B multiplexing needs.

Available components include:

- Couplers (micros, boxes, flat packs).
- Data bus cables.
- Triax connectors and contacts with strain relief.
- One-piece triaxial contacts for MIL-C-38999 connectors (size 8 cavity).
- Bus and stub terminators.
- Cable marker sleeves (TMS).
- Lightweight couplers (see page 8-92).
- Space components (see page 8-103).
- Harness design (HarnWare).

All Raychem data bus components offer:

- High packaging density and weight savings.
- Design flexibility.
- High performance (to 150°C rating).

Raychem MIL-STD-1553B data bus components are also specified in the Air Force drawings listed in Air Force Drawing 8340707.

Tyco Electronics also supplies complete Raychem data bus networks in accordance with customer harness drawings. Using factory-built harnesses eliminates unnecessary splices and connectors, reducing the cost and increasing the reliability of the networks. Factory-built harnesses are pre-tested and ready for installation.









## **Applications**

Tyco Electronics manufactures a line of Raychem SPEC 55 data bus cables that meet or exceed the performance requirements of MIL-STD-1553B. SPEC 55 insulation is a high-temperature, radiation-crosslinked, modified ETFE material that can be used in wire constructions rated up to 200°C.

### **Features and benefits**

- Light weight.
- Highly flexible.
- Flame resistant.
- Chemical resistant to all aircraft fluids.
- Solder iron resistant.
- Defined shielding levels.

### Note:

Tyco Electronics will build harnesses with any customer - specified cables and/or connectors.

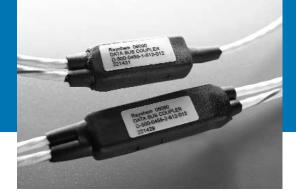
### Fax-on-demand

US only (800) 260-9099 Outside US (650) 257-2301 **Fax ID** 9040

**Description**Cables and

| Specifications/approvals |                    |  |
|--------------------------|--------------------|--|
| Series                   | Military           |  |
| SPEC 55 insulation       | MIL-W-22759/32-/35 |  |
|                          | MIL-W-22759/41-/46 |  |

| Product selection              |             |
|--------------------------------|-------------|
| Cable type                     | Part number |
| 24 AWG single optimized shield | 10612       |
| 24 AWG double optimized shield | 10613       |
| 24 AWG EMP hardened            | 10614       |
| 24 AWG flat shield, unfilled   | 7724 E 2664 |



In-line microcouplers: one- and two stub







## **Applications**

The low-profile configuration of these couplers enables avionics system designers to plan for optimum coupler locations. Microcouplers are supplied with Raychem SPEC 55 data bus cables, including EMP-hardened versions. They are also available assembled with other components into a complete data bus harness.

#### **Features and benefits**

- Environmental sealing.
- No connectors.
- Very small size.
- Light weight (1 stub: 10 g max.; 2 stubs: 15 g max.).
- In-line profile that makes wire bundle mounting possible.
- 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.
- Mean time between failures > 1,000,000 hours.

| Available in: | Americas | Europe | Asia Pacific |
|---------------|----------|--------|--------------|
|               |          |        |              |

| Specifications/approvals |               |        |  |
|--------------------------|---------------|--------|--|
| Series Military Raychem  |               |        |  |
| D-500-04                 | MIL-STD-1553B | D-6020 |  |

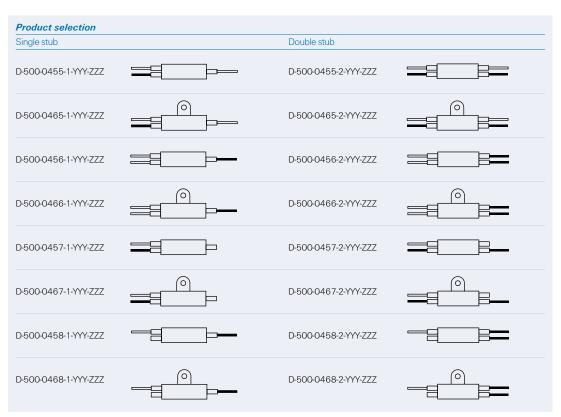
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**Description**Microcoupler
bulletin

080 System bull

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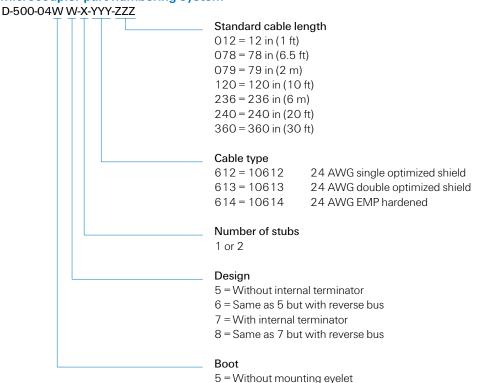
Note:

1. Bus cable \_\_\_\_

2. Stub cable

In-line microcouplers: one- and two-stub (cont'd.)

## Microcoupler part numbering system



6 = With mounting eyelet

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**Description**Microcoupler

)80 System bulletin



## Data Bus (MIL-STD-1553B)

Ultra lightweight in-line microcouplers 1- 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, and minimize weight there is no option with a mounting eyelet.

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

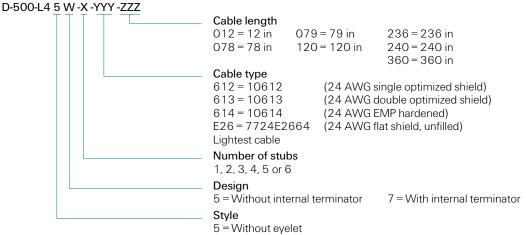
They are also available assembled with other customer specified components into a complete factory-built and tested data bus harness.

#### **Features and benefits**

- Environmental sealing.
- No connectors.
- Very small size.
- Ultra Light weight (1 stub: 6.5 g max.; 2 stubs: 9.5 g max.).
- In-line profile that makes wire bundle mounting possible.
- 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.
- Mean time between failures > 1,000,000 hours.

| Available in:     | Americas | Europe    | Asia Pacific |  |
|-------------------|----------|-----------|--------------|--|
|                   | •        |           | •            |  |
| Specifications/ap | pprovals |           |              |  |
| Series            | Mi       | itary     |              | Raychem                                |
| D-500-L4xx        | MII      | STD-1553B |              | D-6020 (same as current microcouplers) |

## Lightweight in-line couplers - part numbering system



| Product se                 | lection          |                        |                       |             |                     |
|----------------------------|------------------|------------------------|-----------------------|-------------|---------------------|
| D-500-L455                 | 5-X-YYY-ZZZ      |                        | D-500-L456            | 6-X-YYY-ZZZ |                     |
| End view                   |                  | End view               | End view              |             | End view            |
| Left side                  |                  | Right side             | Left side             |             | Right side          |
|                            | 1 stub           |                        | 00                    | 1 stub      |                     |
|                            | 2 stub           |                        |                       | 2 stub      |                     |
| $\boxed{\bigcirc \bullet}$ | 3 stub           |                        | 0                     | 3 stub      |                     |
| (O)                        | 4 stub           |                        | 0                     | 4 stub      |                     |
|                            | 5 stub           |                        |                       | 5 stub      |                     |
|                            | 6 stub           |                        |                       | 6 stub      |                     |
| D-500-L457                 | '-X-YYY-ZZZ      |                        | D-500-L458            | 8-X-YYY-ZZZ |                     |
| End view<br>Left side      |                  | End view<br>Right side | End view<br>Left side |             | End view Right side |
| © •                        | 1 stub           | night side             | © Left side           | 1 stub      | Ingrit side         |
|                            | 2 stub           |                        |                       | 2 stub      |                     |
|                            |                  |                        |                       | Z Stub      |                     |
|                            | 3 stub           |                        |                       | 3 stub      |                     |
|                            | 3 stub<br>4 stub |                        |                       |             |                     |
|                            |                  |                        |                       | 3 stub      |                     |



Box couplers







### **Applications**

The multiport capability of these couplers (up to eight stubs) enables avionics system designers to interconnect black boxes with minimum wire runs. Box couplers are supplied with Raychem triaxial threaded or bayonet connectors.

#### **Features and benefits**

- Light, robust coupler modules with connector versatility.
- Up to eight stub connectors can be arrayed on the "face" of the box coupler. Bus connectors can also be on the "face" or on the "side" of the box.
- Designed with Raychem D-621 series corrosionresistant threaded-type or bayonet-type connectors.

**Note:** Tyco Electronics also designs and manufactures customized Raychem data bus box couplers.

| Available in: | Americas | Europe | Asia Pacific |  |
|---------------|----------|--------|--------------|--|
|               |          |        |              |  |

| Specifications/approvals |              |         |
|--------------------------|--------------|---------|
| Series                   | Military     | Raychem |
| D-500-0255               | MIL-STD-1553 | D-6021  |

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| Product selection |                  |                  |                  |                  |
|-------------------|------------------|------------------|------------------|------------------|
| Product selection | Part number      |                  |                  |                  |
| 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-500-0255-517-1 |
| Face - 2 Stub     | D-500-0255-521-1 | D-500-0255-523-1 | D-500-0255-525-1 | D-500-0255-527-1 |
| Face - 3 Stub     | D-500-0255-531-1 | D-500-0255-533-1 | D-500-0255-535-1 | D-500-0255-537-1 |
| Face - 4 Stub     | D-500-0255-541-1 | D-500-0255-543-1 | D-500-0255-545-1 | D-500-0255-547-1 |
| Face - 5 Stub     | D-500-0255-551-1 | D-500-0255-553-1 | D-500-0255-555-1 | D-500-0255-557-1 |
| Face - 6 Stub     | D-500-0255-561-1 | D-500-0255-563-1 | D-500-0255-565-1 | D-500-0255-567-1 |
| Face - 7 Stub     | D-500-0255-571-1 | D-500-0255-573-1 | D-500-0255-575-1 | D-500-0255-577-1 |
| Face - 8 Stub     | D-500-0255-581-1 | D-500-0255-583-1 | D-500-0255-585-1 | D-500-0255-587-1 |
|                   |                  |                  |                  |                  |
| Side - 1 Stub     | D-500-0255-512-1 | D-500-0255-513-2 | D-500-0255-515-2 | D-500-0255-517-2 |
| Side - 2 Stub     | D-500-0255-522-1 | D-500-0255-523-2 | D-500-0255-525-2 | D-500-0255-527-2 |
| Side - 3 Stub     | D-500-0255-532-1 | D-500-0255-533-2 | D-500-0255-535-2 | D-500-0255-537-2 |
| Side - 4 Stub     | D-500-0255-542-1 | D-500-0255-543-2 | D-500-0255-545-2 | D-500-0255-547-2 |
| Side - 5 Stub     | D-500-0255-552-1 | D-500-0255-553-2 | D-500-0255-555-2 | D-500-0255-557-2 |
| Side - 6 Stub     | D-500-0255-562-1 | D-500-0255-563-2 | D-500-0255-565-2 | D-500-0255-567-2 |
| Side - 7 Stub     | D-500-0255-572-1 | D-500-0255-573-2 | D-500-0255-575-2 | D-500-0255-577-2 |
| Side - 8 Stub     | D-500-0255-582-1 | D-500-0255-583-2 | D-500-0255-585-2 | D-500-0255-587-2 |
|                   |                  |                  |                  |                  |

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











Discrete connectors







### **Applications**

Designed specifically for MIL-STD-1553B data bus applications, the D-621 connector is intended to be a perfect match for the Raychem airworthy data bus cable. Together they provide durable, reliable, and reworkable interconnection hardware for the MIL-STD-1553B market.

#### Features and benefits

- Compliance with MIL-STD-1553B hardware requirements.
- Light weight.
- Removable pin or socket contacts.
- Termination with Raychem 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 because of precisely controlled solder terminations.
- Threaded coupling, with safety wire holes and bayonet coupling styles.
- Low total installed cost.
- 1000-hour salt spray resistance.
- Lower-cost connectors, for benchtop and mock-up.

| Available in: | Americas | Europe | Asia Pacific |  |
|---------------|----------|--------|--------------|--|
|               |          |        |              |  |

| Specifications/approvals |               |         |
|--------------------------|---------------|---------|
| Series                   | Military      | Raychem |
| DK-621                   | MIL-STD-1553B | D-6025  |

Fax ID

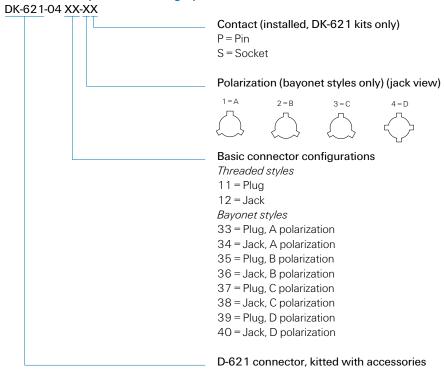
Description

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Connector bulletin

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### 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 size 8 contacts









## **Applications**

Contacts provide full shield coverage with a simple, quick, and reliable termination system. AWG 24 twisted-pair data bus cables are terminated with triaxial SolderTacts contacts, which fit size 8 cavities of MIL-C-38999. Series 1. 3. or 4 connectors.

Raychem size 8 triaxial data bus contacts for MIL-C-38999 connectors have interfaces that comply with MIL-C-39029/90 and /91 to provide ease of termination, and intermateability with more cumbersome crimp contacts.

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

#### **Features and benefits**

- One-step termination.
- Termination time of 1 to 2 minutes.
- No requirements for special termination tools.
- No requirements for special skills.
- Reworkable and repairable terminations.
- Strain relief.
- Continuous 360° shield coverage.
- Triaxial mating face for least susceptibility to damage.
- Rugged construction, because only two parts are being soldered together.
- Inspectable solder terminations.
- Low voltage drop and high reliability due to precisely controlled solder termination.

Available in:

Americas

Europe

Asia Pacific

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**Description**Coavial contact

bulletin

| Specifications/approvals |         |  |
|--------------------------|---------|--|
| 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 |

<sup>\*</sup>This product follows Data Bus Discrete Connectors per MIL-Std-1553B.



Space-grade data bus components





Figure 1. In-line couplers and terminators



Figure 2. Threaded triaxial connectors



Figure 3. Bayonet triaxial connectors



Figure 4. Splice kit

#### **Applications**

Tyco Electronics full line of Raychem data bus products includes space-grade couplers, terminators, triaxial connectors, and SolderShield splices. These spacegrade components meet the low outgassing requirements of NASA specification SP-R-0022A and can be used in outer-space applications.

Raychem space-grade components are designed in a variety of configurations and are currently available either as discrete items or as Raychem- assembled harnesses. Using factory-built harnesses eliminates unnecessary splices and connectors, reducing the cost and increasing the reliability of the networks.

Specification control drawings describe the design features and performance characteristics of Raychem space-grade couplers, terminators, connectors, and splices. The space-grade data bus couplers, terminators, and connectors have tin/nickel-plated metallic parts and baked silicone rubber components. For strain relief they include Raychem RT-218 low-outgassing tubing. Unlike parts intended for aircraft applications, these components do not have polymeric environmental covers.

The table on the next page lists Raychem standard space-grade data bus components with their part numbers and descriptions. New components will become available per customer request.

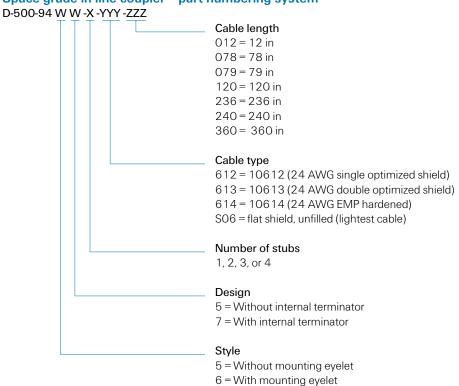
#### Features and benefits

- Complete line of space-qualified MIL-STD-1553B components.
- Low outgassing levels that meet NASA requirements.
- Light weight.
- Rugged construction.

| Available in: | Americas | Europe | Asia Pacific |  |
|---------------|----------|--------|--------------|--|
|               |          |        |              |  |

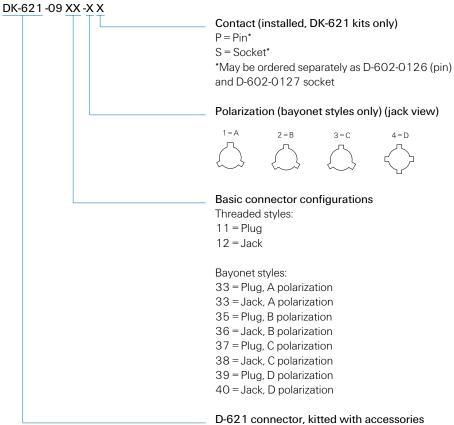
| Specifications/approvals       |         |
|--------------------------------|---------|
| Series                         | Raychem |
| Space-grade databus components | D-6022  |

## Space-grade in-line coupler - part numbering system



Space-grade data bus components (cont'd.)





Fax ID

**Description**Data sheet

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## Space-grade terminators - part numbering system

D-500-9463-ZZZ

### Cable type

612 = 10612 (24 AWG single optimized shield)

613 = 10613 (24 AWG double optimized shield)

614 = 10614 (24 AWG EMP hardened)

SO6 = flat shield, unfilled (lightest cable)

Space-grade splice kit = D-150-9708-5

Customer-specified harness assemblies and HarnWare





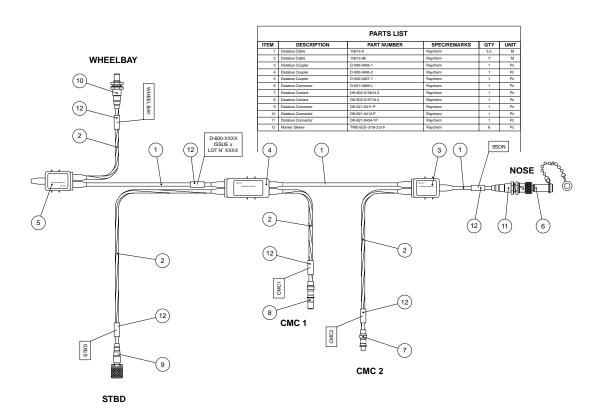


Tyco Electronics supplies complete Raychem data bus networks in accordance with customer harness drawings, with any customer-specified cables and/or connectors. Using factory-built harnesses eliminates unnecessary splices and connectors, reducing the cost and increasing the reliability of the networks. Factory-built harnesses are pre-tested and ready for installation.

HarnWare - harness design software - allows designers to draw a data bus harness in a matter of minutes, while selecting Raychem or others' components; a bill of materials is automatically generated.

| Available in: | Americas | Europe | Asia Pacific |  |
|---------------|----------|--------|--------------|--|
|               |          |        |              |  |

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Accessories









## **Applications**

Tyco Electronics manufactures all the products needed to build a MIL-STD-1553B data bus network. In addition to the main components (couplers, connectors, contacts, and cables), Tyco Electronics supplies the accessory components that may be necessary to complete a data bus system. These include:

- 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).



#### **Features and benefits**

- A single source for all harness components.
- Products designed to work together.

| Available in: | Americas | Europe | Asia Pacific |  |
|---------------|----------|--------|--------------|--|
|               | _        | _      | _            |  |

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030 Accessorie

| Product selection           |                |            |  |            |            |
|-----------------------------|----------------|------------|--|------------|------------|
|                             |                | $\neg$     |  |            |            |
|                             |                |            |  |            |            |
| Splice-in                   | D-621 plug     | D-621 jack |  |            |            |
| Due and stub townington     |                |            |  |            |            |
| Bus and stub terminators    | 12-inch cable  |            |  |            |            |
| Spliced-in                  |                |            |  |            |            |
| 77-ohm 10612 cable          | D-500-0463-612 | 八          | 八                                      | 八          |            |
| 77-ohm 10613 cable          | D-500-0463-613 | { }        | <i>(</i> )                             | <i>\</i>   | ( )        |
| 77-ohm 10614 cable          | D-500-0463-614 | ~~         | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ |            | <b></b>    |
| 77-ohm 7724E2664 cable      | D-500-0463-E26 |            |  |            |            |
| D-621 Series—plug           | Threaded       | Bayonet A  | Bayonet B                              | Bayonet C  | Bayonet D  |
| 77-ohm pin contact          | D-621-0413     | D-621-0453 | D-621-0454                             | D-621-0455 | D-621-0456 |
| 77-ohm socket contact       | D-621-0415     | D-621-0469 | D-621-0470                             | D-621-0471 | D-621-0472 |
| 3000-ohm pin contact        | D-621-0417     | D-621-0457 | D-621-0458                             | D-621-0459 | D-621-0476 |
| 3000-ohm socket contact     | D-621-0407     | D-621-0473 | D-621-0474                             | D-621-0475 | D-621-0460 |
| D-621 Series—jack           | Threaded       | Bayonet A  | Bayonet B                              | Bayonet C  | Bayonet D  |
| 77-ohm pin contact          | D-621-0418     | D-621-0477 | D-621-0478                             | D-621-0479 | D-621-0480 |
| 77-ohm socket contact       | D-621-0406     | D-621-0461 | D-621-0462                             | D-621-0463 | D-621-0464 |
| 3000-ohm pin contact        | D-621-0423     | D-621-0481 | D-621-0482                             | D-621-0483 | D-621-0484 |
| 3000-ohm socket contact     | D-621-0424     | D-621-0465 | D-621-0466                             | D-621-0467 | D-621-0468 |
| D-621 Series—L              | Lanyard 7"     |            |  |            |            |
| 0                           |                |            |  |            |            |
| Connector caps D-621 Series | Threaded       | Bayonet A  | Bayonet B                              | Bayonet C  | Bayonet D  |
| Plug cap for jack connector | D-600-0083     | D-600-0068 | D-600-0068                             | D-600-0068 | D-600-0065 |
| Supplied with 7" Lanyard    | D-000-0003     | 2-000-0008 | 5-000-0008                             | 5-000-0008 | 2-000-0005 |
| oupplied Will / Larlydiu    |                |            |  |            |            |
| Cable splice kits           |                |            |  |            |            |
| Cables                      | Flexible crimp |            |  |            |            |
| All data bus cables         | D-150-0708-5   |            |  |            |            |

Accessories (cont'd.)

| Panel thickness | Connector | Contact | Terminator      | Mate with          |                      |
|-----------------|-----------|---------|-----------------|--------------------|----------------------|
|                 |           |         | reference       | Standard connector | Long reach connector |
| POLARITY A      |           |         |                 |                    |                      |
| 77 Ohm bus      | Plug      | Pin     | D-621-0453(-L)  | DK-621-0434-1S     | DK-621-0550-1S       |
| terminator      | Plug      | Socket  | D-621-0469(-L)  | DK-621-0434-1P     | DK-621-0550-1P       |
|                 | Jack      | Pin     | D-621-0477(-L)  | DK-621-0433-1S     |                      |
|                 | Jack      | Socket  | D-621-0461(-L)  | DK-621-0433-1P     |                      |
| 3K Ohm stub     | Plug      | Pin     | D-621-0457(-L)  | D-621-0434-1S      | DK-621-0550-1S       |
| terminator      | Plug      | Socket  | D-621-0473(-L)  | DK-621-0434-1P     | DK-621-0550-1P       |
|                 | Jack      | Pin     | D-621-0481(-L)  | DK-621-0433-1S     |                      |
|                 | Jack      | Socket  | D-621-0465(-L)  | DK-621-0433-1P     |                      |
| POLARITY B      |           |         |                 |                    |                      |
| 77 Ohm bus      | Plug      | Pin     | D-621-0454-(-L) | DK-621-0436-2S     | DK-621-0548-2S       |
| terminator      | Plug      | Socket  | D-621-0470-(-L) | DK-621-0436-2P     | DK-621-0548-2P       |
|                 | Jack      | Pin     | D-621-0478-(-L) | DK-621-0435-2S     |                      |
|                 | Jack      | Socket  | D-621-0462-(-L) | DK-621-0435-2P     |                      |
| 3K Ohm stub     | Plug      | Pin     | D-621-0458-(-L) | DK-621-0436-2S     | DK-621-0548-2S       |
| terminator      | Plug      | Socket  | D-621-0474-(-L) | DK-621-0436-2P     | DK-621-0548-2P       |
|                 | Jack      | Pin     | D-621-0482-(-L) | DK-621-0435-2S     |                      |
|                 | Jack      | Socket  | D-621-0466-(-L) | DK-621-0435-2P     |                      |
| POLARITY C      |           |         |                 |                    |                      |
| 77 Ohm bus      | Plug      | Pin     | D-621-0455(-L)  | DK-621-0438-3S     | DK-621-0546-3S       |
| terminator      | Plug      | Socket  | D-621-0471(-L)  | DK-621-0438-3P     | DK-621-0546-3P       |
|                 | Jack      | Pin     | D-621-0479(-L)  | DK-621-0437-3S     |                      |
|                 | Jack      | Socket  | D-621-0463(-L)  | DK-621-0437-3P     |                      |
| 3K Ohm stub     | Plug      | Pin     | D-621-0459(-L)  | DK-621-0438-3S     | DK-621-0546-3S       |
| terminator      | Plug      | Socket  | D-621-0475(-L)  | DK-621-0438-3P     | DK-621-0546-3P       |
|                 | Jack      | Pin     | D-621-0483(-L)  | DK-621-0437-3S     |                      |
|                 | Jack      | Socket  | D-621-0467(-L)  | DK-621-0437-3P     |                      |
| POLARITY D      |           |         |                 |                    |                      |
| 77 Ohm bus      | Plug      | Pin     | D-621-0456(-L)  | DK-621-0440-4S     | DK-621-0551-4S       |
| terminator      | Plug      | Socket  | D-621-0472(-L)  | DK-621-0440-4P     | DK-621-0551-4P       |
|                 | Jack      | Pin     | D-621-0480(-L)  | DK-621-0439-4S     |                      |
|                 | Jack      | Socket  | D-621-0464(-L)  | DK-621-0439-4P     |                      |
| 3K Ohm stub     | Plug      | Pin     | D-621-0460(-L)  | DK-621-0440-4S     | DK-621-0551-4S       |
| terminator      | Plug      | Socket  | D-621-0476(-L)  | DK-621-0440-4P     | DK-621-0551-4P       |
|                 | Jack      | Pin     | D-621-0468(-L)  | DK-621-0439-4S     |                      |
|                 | Jack      | Socket  | D-621-0484(-L)  | DK-621-0439-4P     |                      |
| 77 Ohm bus      | Plug      | Pin     | D-621-0413(-L)  | DK-621-0412-S      | DK-621-0512-S        |
| terminator      | Plug      | Socket  | D-621-0415(-L)  | DK-621-0412-P      | DK-621-0512-P        |
|                 | Jack      | Pin     | D-621-0418(-L)  | DK-621-0411-S      |                      |
|                 | Jack      | Socket  | D-621-0406(-L)  | DK-621-0411-P      |                      |
| 3K Ohm stub     | Plug      | Pin     | D-621-0417(-L)  | DK-621-0412-S      | DK-621-0512-S        |
| terminator      | Plug      | Socket  | D-621-0407(-L)  | DK-621-0412-P      | DK-621-0512-P        |
|                 | Jack      | Pin     | D-621-0423(-L)  | DK-621-0411-S      |                      |
|                 | Jack      | Socket  | D-621-0424(-L)  | DK-621-0411-P      |                      |