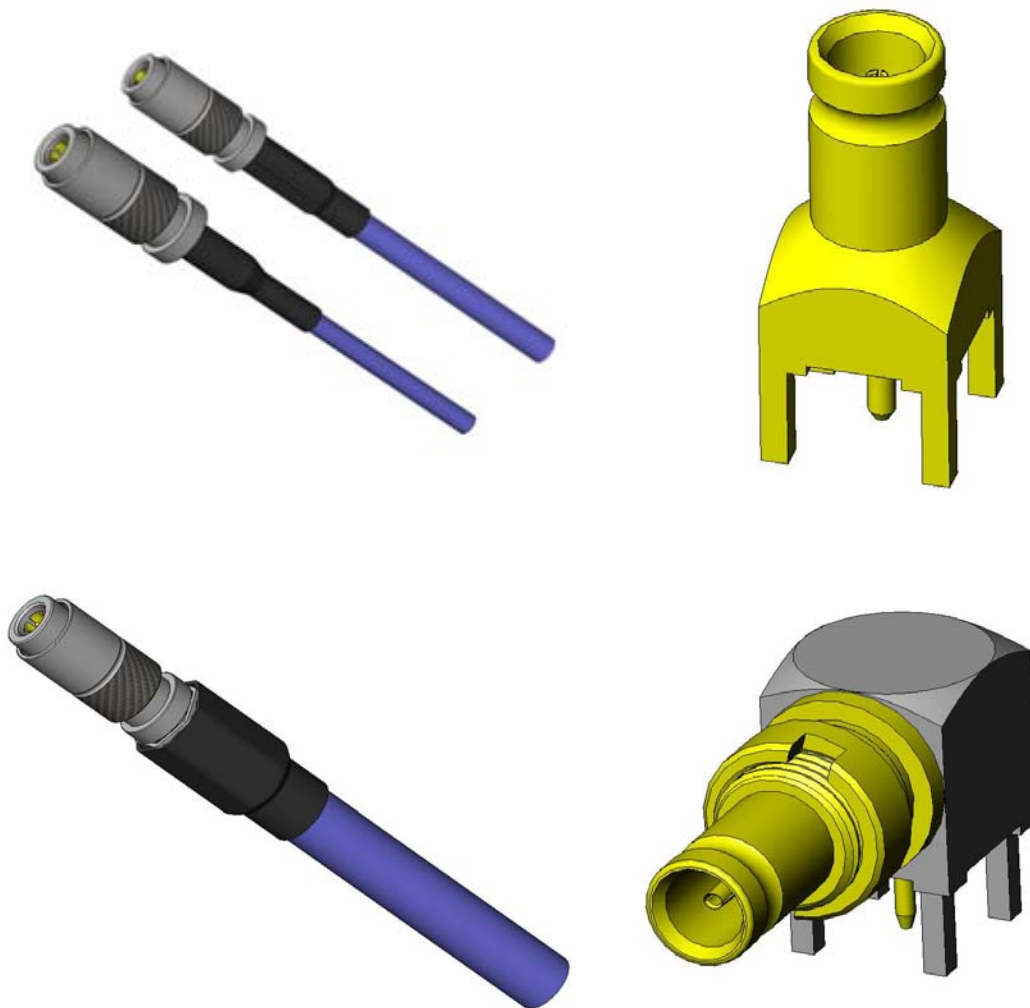




|                                                                                                                            |                            |                                    |                                      |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------|--------------------------------------|
| Project Number: Design Qualification Test Report                                                                           |                            | Tracking Code: 110625_Report_Rev_1 |                                      |
| Requested by: Tory Meek                                                                                                    |                            | Date: 1/17/2011                    | Product Rev: 0                       |
| Part #: DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |                            | Lot #: N/A                         | Tech: Tony Wagoner<br>Eng: Eric Ming |
| Part description: DIN7A-PP/DIN7A-J-P                                                                                       |                            |                                    | Qty to test: 50                      |
| Test Start: 11/3/2010                                                                                                      | Test Completed: 12/10/2010 |                                    |                                      |



## Design Qualification Test Report

DIN7A-PP/DIN7A-J-P

DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
RFB8T-78SP4-303030-0150

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

## CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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### SCOPE

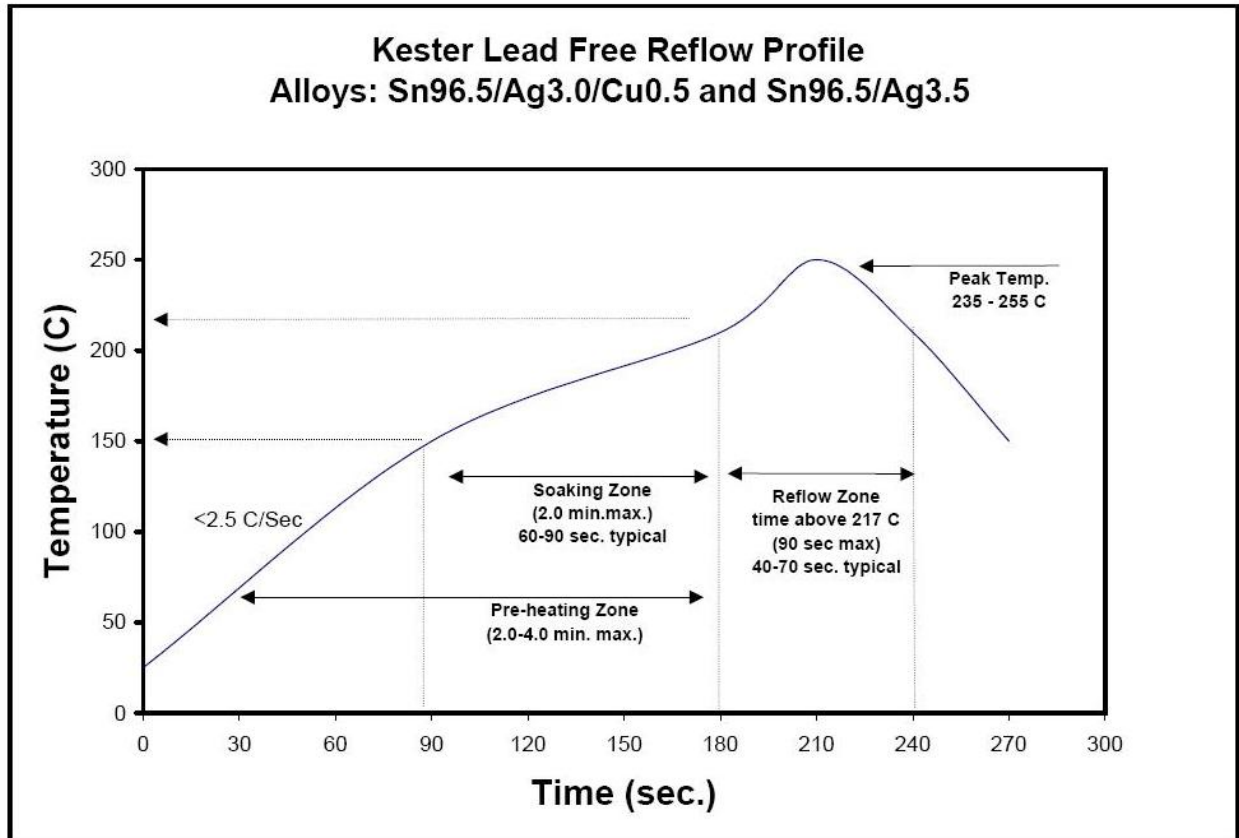
To perform the following tests: Design Qualification Test, Please see test plan.

### APPLICABLE DOCUMENTS

Standards: EIA Publication 364

### TEST SAMPLES AND PREPARATION

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) After soldering, the parts to be used for LLCR and DWV/IR testing were cleaned according to TLWI-0001.
- 4) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
- 5) The automated procedure is used with aqueous compatible soldering materials.
- 6) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
- 7) Any additional preparation will be noted in the individual test sequences.
- 8) Solder Information: Lead free
- 9) Re-Flow Time/Temp: See accompanying profile.
- 10) Samtec Test PCBs used: PCB-102599-TST-01A/ PCB-102599-TST-01B

**TYPICAL OVEN PROFILE (Soldering Parts to Test Boards)**

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

## FLOWCHARTS

### Gas Tight

| TEST<br>STEP | GROUP A1<br><br>8 parts<br><br>RF179-78SP4-303030-0150<br>DIN7A-J-P-G-ST-TH1 |
|--------------|------------------------------------------------------------------------------|
| 01           | LLCR-1                                                                       |
| 02           | Gas Tight                                                                    |
| 03           | LLCR-2                                                                       |

Gas Tight = EIA-364-36A

LLCR = EIA-364-23, LLCR

use Keithley 580 in the dry circuit mode, 10 mA Max

### IR & DWV

| TEST<br>STEP | GROUP A1<br><br>2 Mated Sets<br>Break Down -<br>Pin to Ground<br><br>RF179-78SP4-303030-150<br>DIN7A-J-P-G-ST-TH1 | GROUP A2<br>2 Unmated of Part # Being<br>Tested<br>Break Down -<br>Pin to Ground<br><br>RF179-78SP4-303030-150 | GROUP A3<br><br>2 Unmated of Mating Part #<br>Break Down -<br>Pin to Ground<br><br>DIN7A-J-P-G-ST-TH1 | GROUP B1<br><br>2 Mated Sets<br>Break Down -<br>Pin to Ground<br><br>RF179-78SP4-303030-150<br>DIN7A-J-P-G-ST-TH1 |
|--------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 01           | DWV(750VRMS Min)<br>/Break Down Voltage                                                                           | DWV(750VRMS Min)<br>/Break Down Voltage                                                                        | DWV(750VRMS Min)<br>/Break Down Voltage                                                               | IR & DWV at test voltage<br>(on both mated sets and on each<br>connector unmated)                                 |
| 02           |                                                                                                                   |                                                                                                                |                                                                                                       | Thermal Aging<br>(both sets unmated)                                                                              |
| 03           |                                                                                                                   |                                                                                                                |                                                                                                       | IR & DWV at test voltage<br>(on both mated sets and on each<br>connector unmated)                                 |
| 04           |                                                                                                                   |                                                                                                                |                                                                                                       | Cyclic Humidity<br>(both sets unmated)                                                                            |
| 05           |                                                                                                                   |                                                                                                                |                                                                                                       | IR & DWV at test voltage<br>(on both mated sets and on each<br>connector unmated)                                 |

DWV on group B1 to be performed at Test Voltage

DWV test voltage PER CECC 22 230 Minimum or equal to 75 % of the lowest break down voltage from group A1, A2 or A3

Thermal Aging = EIA-364-17, Test Condition 4 (105°C)

Time Condition 'B' (250 Hours)

Humidity = EIA-364-31, Test Condition B (240 Hours)

and Method III (+25°C to +65°C @ 90% RH to 98% RH)

ambient pre-condition and delete steps 7a and 7b

IR = EIA-364-21

DWV = EIA-364-20, Test Condition 1

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

### FLOWCHARTS Continued

| TEST<br>STEP | GROUP A1<br><br>2 Mated Sets<br>Break Down -<br>Pin to Ground<br><br>RF179-78SP4-303030-150<br><br>DIN7A-J-P-G-ST-TH1 | GROUP A2<br>2 Unmated of Part # Being<br>Tested<br>Break Down -<br>Pin to Ground<br><br>RF179-78SP4-303030-150 | GROUP A3<br>2 Unmated of Mating Part #<br>Break Down -<br>Pin to Ground<br><br>DIN7A-J-P-G-ST-TH1 | GROUP B1<br><br>2 Mated Sets<br>Break Down -<br>Pin to Ground<br><br>RF179-78SP4-303030-150<br><br>DIN7A-J-P-G-ST-TH1 |
|--------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 01           | DWV(750VRMS Min)<br>/Break Down Voltage                                                                               | DWV(750VRMS Min)<br>/Break Down Voltage                                                                        | DWV(750VRMS Min)<br>/Break Down Voltage                                                           | IR & DWV at test voltage<br>(on both mated sets and on each<br>connector unmated)                                     |
| 02           |                                                                                                                       |                                                                                                                |                                                                                                   | Thermal Aging<br>(both sets unmated)                                                                                  |
| 03           |                                                                                                                       |                                                                                                                |                                                                                                   | IR & DWV at test voltage<br>(on both mated sets and on each<br>connector unmated)                                     |
| 04           |                                                                                                                       |                                                                                                                |                                                                                                   | Cyclic Humidity<br>(both sets unmated)                                                                                |
| 05           |                                                                                                                       |                                                                                                                |                                                                                                   | IR & DWV at test voltage<br>(on both mated sets and on each<br>connector unmated)                                     |

DWV on group B1 to be performed at Test Voltage

DWV test voltage PER CECC 22 230 Minimum or equal to 75% of the lowest break down voltage from group A1, A2 or A3

Thermal Aging = EIA-364-17, Test Condition 4 (105°C)

Time Condition 'B' (250 Hours)

Humidity = EIA-364-31, Test Condition B (240 Hours)

and Method III (+25°C to +65°C @ 90% RH to 98% RH)

ambient pre-condition and delete steps 7a and 7b

IR = EIA-364-21

DWV = EIA-364-20, Test Condition 1

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**FLOWCHARTS Continued****Mating/Unmating/Gaps/Normal Force/Deflection Force**

| TEST STEP | GROUP A1<br>10 PCS<br><br>RF179-78SP4-SING-0150 w/o coupling nut<br><br>DIN7A-J-P-G-ST-TH1 | GROUP B1<br>10 PCS<br><br>DIN7A-J-P-G-ST-TH1-SKT<br><br>DINA-OCNT-001-F | GROUP B2<br>10 PCS<br><br>DIN7A-J-P-G-ST-TH1-SKT / DIN7A-P-C-G-ST-CA3-PIN<br><br>DINA-OCNT-001-F /<br>DINA-J-P-F-ST-TH1-SHL | GROUP C1<br>10 PCS<br><br>RFB8T-78SP4-SING-0150<br><br>DIN7A-J-P-G-ST-TH1 |
|-----------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 01        | Contact Gaps, Both                                                                         | Contact Gaps, Both                                                      | Contact Gaps, Both                                                                                                          | Force required to slide Coupling to Engagment / Disengagement             |
| 02        | Mating / Unmating                                                                          | Setup Approved                                                          | Setup Approved                                                                                                              |                                                                           |
| 03        | 25 Cycles                                                                                  | Normal Force (Loose piece parts, both center and outer)                 | Thermal Aging (Mated)                                                                                                       |                                                                           |
| 04        | Clean w/Compressed Air                                                                     |                                                                         | Contact Gaps                                                                                                                |                                                                           |
| 05        | Mating / Unmating                                                                          |                                                                         | Normal Force (Loose piece parts, both center and outer)                                                                     |                                                                           |
| 06        | 25 Cycles (50 Total)                                                                       |                                                                         |                                                                                                                             |                                                                           |
| 07        | Clean w/Compressed Air                                                                     |                                                                         |                                                                                                                             |                                                                           |
| 08        | Mating / Unmating                                                                          |                                                                         |                                                                                                                             |                                                                           |
| 09        | 25 Cycles (75 Total)                                                                       |                                                                         |                                                                                                                             |                                                                           |
| 10        | Clean w/Compressed Air                                                                     |                                                                         |                                                                                                                             |                                                                           |
| 11        | Mating / Unmating                                                                          |                                                                         |                                                                                                                             |                                                                           |
| 12        | 25 Cycles (100 Total)                                                                      |                                                                         |                                                                                                                             |                                                                           |
| 13        | Clean w/Compressed Air                                                                     |                                                                         |                                                                                                                             |                                                                           |
| 14        | Mating / Unmating                                                                          |                                                                         |                                                                                                                             |                                                                           |
| 15        | Contact Gaps, Both                                                                         |                                                                         |                                                                                                                             |                                                                           |

Thermal Aging = EIA-364-17, Test Condition 4 (105°C)

Time Condition 'B' (250 Hours)

Humidity = EIA-364-31, Test Condition B (240 Hours)

and Method III (+25°C to +65°C @ 90% RH to 98% RH)

ambient pre-condition and delete steps 7a and 7b

Mating/Un-Mating Forces = EIA-364-13

Normal Force = EIA-364-04

(Perpendicular) displacement Force = 12.7 mm/min +/- 6 mm/min

Spec is 50 N @ 1 mm displacement

Contact Gaps/Height - No standard method. Usually measured optically

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

**FLOWCHARTS Continued**

**Durability/Thermal Age/Cyclic Humidity**

| TEST STEP | GROUP A2<br>8 Points<br>100 Cycles<br>RFB8T-78SP4-303030-150<br>DIN7A-J-P-G-ST-TH1 |
|-----------|------------------------------------------------------------------------------------|
| 01        | LLCR-1                                                                             |
| 02        | 100 Cycles                                                                         |
| 03        | Clean Mating Interface                                                             |
| 04        | LLCR-2                                                                             |
| 05        | Thermal Age (Mated and undisturbed)                                                |
| 06        | LLCR-3                                                                             |
| 07        | Cyclic Humidity (Mated and undisturbed)                                            |
| 08        | LLCR-4                                                                             |

use Keithley 580 in the dry circuit mode, 10 mA Max

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**FLOWCHARTS Continued****Connector Pull**

| TEST STEP | GROUP A1<br>5 Pieces<br>DIN7A-P-C-H-ST-CA3-PIN soldered to RG179<br><br>SIG 0° | GROUP B1<br>5 Pieces<br><br>RF179-78SP4-303030-0150<br><br>SIG & GND 0° | GROUP C1<br>5 Pieces<br><br>RF179-78SP4-303030-0150<br>DIN7A-J-P-G-ST-TH1<br>SIG & GND 0° |
|-----------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 01        | Pull test, Continuity                                                          | Pull test, Continuity                                                   | Pull test, Continuity                                                                     |

**Monitor continuity and pull; record forces when continuity fails.**

| TEST STEP | GROUP A2<br>5 Pieces<br>DIN7A-P-C-H-ST-CA8-PIN soldered to Belden 1855A<br><br>SIG 0° | GROUP B2<br>5 Pieces<br><br>RFB8T-78SP4-303030-0150<br><br>SIG & GND 0° |
|-----------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 01        | Pull test, Continuity                                                                 | Pull test, Continuity                                                   |

**Monitor continuity and pull; record forces when continuity fails.****Connector Pull**

| TEST STEP | GROUP A1<br>5 Pieces<br>DIN7A-P-C-G-ST-CA6-PIN soldered to Belden 1694A<br><br>SIG 0° | GROUP B1<br>5 Pieces<br><br>RFB6T-78SP4-303030-0150<br><br>SIG & GND 0° | GROUP C1<br>5 Pieces<br><br>RFB6T-78SP4-303030-0150<br>DIN7A-J-P-G-RA-BH1<br>SIG & GND 0° |
|-----------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 01        | Pull test, Continuity                                                                 | Pull test, Continuity                                                   | Pull test, Continuity                                                                     |

**Monitor continuity and pull; record forces when continuity fails.**

| TEST STEP | GROUP A1<br>5 Pieces<br><br>SUB-DIN7J-P-GN-RA-BH11<br><br>SIG 90° |
|-----------|-------------------------------------------------------------------|
| 01        | Pull test, Continuity                                             |

**ATTRIBUTE DEFINITIONS**

The following is a brief, simplified description of attributes.

**THERMAL:**

- 1) EIA-364-17, *Temperature Life with or without Electrical Load Test Procedure for Electrical Connectors*.
- 2) Test Condition 4 at 105° C.
- 3) Test Time Condition B for 250 hours.
- 4) All test samples are pre-conditioned at ambient.
- 5) All test samples are exposed to environmental stressing in the mated condition.

**HUMIDITY:**

- 1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors*.
- 2) Test Condition B, 240 Hours.
- 3) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
- 4) All samples are pre-conditioned at ambient.
- 5) All test samples are exposed to environmental stressing in the mated condition.

**CONTACT GAPS:**

- 1) Gaps above the surrounding plastic surface were measured before and after stressing the contacts (e.g. thermal aging, mechanical cycling, etc.).
- 2) Typically, all contacts on the connector are measured.

**MATING/UNMATING:**

- 1) Reference document: EIA-364-13, *Mating and Unmating Forces Test Procedure for Electrical Connectors*.
- 2) The full insertion position was to within 0.003” to 0.004” of the plug bottoming out in the receptacle to prevent damage to the system under test.
- 3) One of the mating parts is secured to a floating X-Y table to prevent damage during cycling.

**NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):**

- 1) Reference document: EIA-364-04, *Normal Force Test Procedure for Electrical Connectors*.
- 2) The contacts shall be tested in the connector housing.
- 3) If necessary, a “window” shall be made in the connector body to allow a probe to engage and deflect the contact at the same attitude and distance (plus 0.05 mm [0.002”]) as would occur in actual use.
- 4) The connector housing shall be placed in a holding fixture that does not interfere with or otherwise influence the contact force or deflection.
- 5) Said holding fixture shall be mounted on a floating, adjustable, X-Y table on the base of the Dillon TC<sup>2</sup>, computer controlled test stand with a deflection measurement system accuracy of 5.0 µm (0.0002”).
- 6) The nominal deflection rate shall be 5 mm (0.2”)/minute.
- 7) Unless otherwise noted a minimum of five contacts shall be tested.
- 8) The force/deflection characteristic to load and unload each contact shall be repeated five times.
- 9) The system shall utilize the TC<sup>2</sup> software in order to acquire and record the test data.
- 10) The permanent set of each contact shall be measured within the TC<sup>2</sup> software.
- 11) The acquired data shall be graphed with the deflection data on the X-axis and the force data on the Y-axis and a print out will be stored with the Tracking Code paperwork.

**LLCR:**

- 1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
  - a.  $\leq +5.0$  mOhms: ----- Stable
  - b.  $+5.1$  to  $+10.0$  mOhms: ----- Minor
  - c.  $+10.1$  to  $+15.0$  mOhms: ----- Acceptable
  - d.  $+15.1$  to  $+50.0$  mOhms: ----- Marginal
  - e.  $+50.1$  to  $+2000$  mOhms: ----- Unstable
  - f.  $>+2000$  mOhms: ----- Open Failure

**GAS TIGHT:**

To provide method for evaluating the ability of the contacting surfaces in preventing penetration of harsh vapors which might lead to oxide formation that may degrade the electrical performance of the contact system.

- 1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
  - a.  $\leq +5.0$  mOhms: ----- Stable
  - b.  $+5.1$  to  $+10.0$  mOhms: ----- Minor
  - c.  $+10.1$  to  $+15.0$  mOhms: ----- Acceptable
  - d.  $+15.1$  to  $+50.0$  mOhms: ----- Marginal
  - e.  $+50.1$  to  $+2000$  mOhms: ----- Unstable
  - f.  $>+2000$  mOhms: ----- Open Failure
- 4) Procedure:
  - a. Reference document: EIA-364-36, *Test Procedure for Determination of Gas-Tight Characteristics for Electrical Connectors, Sockets and/or Contact Systems*.
  - b. Test Conditions:
    - i. Class II--- Mated pairs of contacts assembled to their plastic housings.
    - ii. Reagent grade Nitric Acid shall be used of sufficient volume to saturate the test chamber
    - iii. The ratio of the volume of the test chamber to the surface area of the acid shall be 10:1.
    - iv. The chamber shall be saturated with the vapor for at least 15 minutes before samples are added.
    - v. Exposure time, 55 to 65 minutes.
    - vi. The samples shall be no closer to the chamber walls than 1 inches and no closer to the surface of the acid than 3 inches.
    - vii. The samples shall be dried after exposure for a minimum of 1 hour.
    - viii. Drying temperature  $50^{\circ}\text{C}$
    - ix. The final LLCR shall be conducted within 1 hour after drying.

**CONNECTOR PULL:**

- 1) Secure cable near center and pull on connector
  - a. At 90°, right angle to cable
  - b. At 0°, in-line with cable

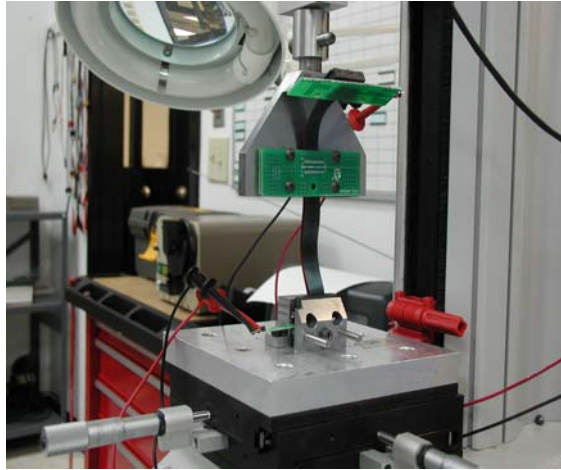


Fig. 1

(Typical set-up, actual part not depicted.)

0° Connector pull, notice the electrical continuity hook-up wires.

**RESULTS****Contact Gaps****DIN7A-J-P-G-ST-TH1**

- **Initial**
  - o **Min**----- **0.3600 mm**
  - o **Max**----- **0.3805 mm**
- **After 100 Cycles**
  - o **Min**----- **0.3601 mm**
  - o **Max**----- **0.3711 mm**

**DIN7A-PP-C-CF-ST-CA3**

- **Initial**
  - o **Min**----- **3.1092 mm**
  - o **Max**----- **3.1802 mm**
- **After 100 Cycles**
  - o **Min**----- **3.0913 mm**
  - o **Max**----- **3.1684 mm**

**DIN7A-J-P-G-ST-TH1**

- **Initial**
  - o **Min**----- **0.3659 mm**
  - o **Max**----- **0.3819 mm**

**DIN7A-P-C-G-ST-CA3-PIN**

- **Initial**
  - o **Min**----- **0.3609 mm**
  - o **Max**----- **0.3729 mm**
- **After thermal**
  - o **Min**----- **0.3801 mm**
  - o **Max**----- **0.4020 mm**

**Mating – Unmating Forces****DIN7A-PP-C-GF-ST-CA3 & DIN7A-PP-C-GF-ST-CA8/ DIN7A-J-P-G-ST-TH1**

- **Initial**
  - o **Mating**
    - **Min**----- **1.05 Lbs**
    - **Max**----- **1.80 Lbs**
  - o **Unmating**
    - **Min**----- **0.71 Lbs**
    - **Max**----- **1.49 Lbs**
- **After 25 Cycles**
  - o **Mating**
    - **Min**----- **0.89 Lbs**
    - **Max**----- **2.75 Lbs**
  - o **Unmating**
    - **Min**----- **0.91 Lbs**
    - **Max**----- **2.43 Lbs**
- **After 50 Cycles**
  - o **Mating**
    - **Min**----- **0.87 Lbs**
    - **Max**----- **2.93 Lbs**
  - o **Unmating**
    - **Min**----- **0.95 Lbs**
    - **Max**----- **2.66 Lbs**

**RESULTS Continued**

- **After 75 Cycles**
  - **Mating**
    - **Min** ----- 0.91 Lbs
    - **Max** ----- 3.24 Lbs
  - **Unmating**
    - **Min** ----- 0.98 Lbs
    - **Max** ----- 2.79 Lbs
- **After 100 Cycles**
  - **Mating**
    - **Min** ----- 0.90 Lbs
    - **Max** ----- 3.75 Lbs
  - **Unmating**
    - **Min** ----- 1.08 Lbs
    - **Max** ----- 2.28 Lbs

**Cable Pull Force**

DIN7A-P-C-H-ST-CA3-PIN soldered to RG179 SIG 0°

- **Min** ----- 5.00 Lbs
- **Max** ----- 8.00 Lbs

RF179-78SP4-303030-0150 SIG &amp; GND 0°

- **Min** ----- 25.50 Lbs
- **Max** ----- 33.50 Lbs

RF179-78SP4-303030-0150/ DIN7A-J-P-G-ST-TH1 SIG &amp; GND 0°

- **Min** ----- 32.00 Lbs
- **Max** ----- 43.50 Lbs

DIN7A-P-C-H-ST-CA8-PIN soldered to Belden 1855A S IG 0°

- **Min** ----- 18.50 Lbs
- **Max** ----- 20.00 Lbs

RFB8T-78SP4-303030-0150 SIG &amp; GND 0°

- **Min** ----- 39.50 Lbs
- **Max** ----- 46.00 Lbs

DIN7A-P-C-G-ST-CA6-PIN soldered to Belden 1694A SIG 0°

- **Min** ----- 37.50 Lbs
- **Max** ----- 44.50 Lbs

RFB6T-78SP4-303030-0150 SIG &amp; GND 0°

- **Min** ----- 39.50 Lbs
- **Max** ----- 48.00 Lbs

RFB6T-78SP4-303030-0150/ DIN7A-J-P-G-RA-BH1 SIG &amp; GND 0°

- **Min** ----- 26.50 Lbs
- **Max** ----- 31.50 Lbs

RFB6T-78SP4-303030-0150/ DIN7A-J-P-G-RA-BH1 SIG &amp; GND 90°

- **Min** ----- 10.00 Lbs
- **Max** ----- 12.00 Lbs

**RESULTS Continued****COUPLING/DISENGAGEMENT:****RFB8T-78SP4-SING-0150/ DIN7A-J-P-G-ST-TH1**

- **Cycle#1**
  - **Pull force**
    - **Min** ----- 0.95 Lbs
    - **Max** ----- 1.98 Lbs
  - **Push force**
    - **Min** ----- 0.71 Lbs
    - **Max** ----- 2.10 Lbs
- **Cycle#2**
  - **Pull force**
    - **Min** ----- 0.95 Lbs
    - **Max** ----- 3.76 Lbs
  - **Push force**
    - **Min** ----- 1.06 Lbs
    - **Max** ----- 4.71 Lbs
- **Cycle#3**
  - **Pull force**
    - **Min** ----- 0.95 Lbs
    - **Max** ----- 1.85 Lbs
  - **Push force**
    - **Min** ----- 0.77 Lbs
    - **Max** ----- 1.48 Lbs
- **Cycle#4**
  - **Pull force**
    - **Min** ----- 0.95 Lbs
    - **Max** ----- 2.50 Lbs
  - **Push force**
    - **Min** ----- 1.10 Lbs
    - **Max** ----- 4.73 Lbs
- **Cycle#5**
  - **Pull force**
    - **Min** ----- 2.42 Lbs
    - **Max** ----- 3.18 Lbs
  - **Push force**
    - **Min** ----- 2.65 Lbs
    - **Max** ----- 4.60 Lbs

**RESULTS Continued****LLCR Durability (8 signal pin LLCR test points and 8 ground pin LLCR test points)**

DIN7A-PP-C-GF-ST-CA3 &amp; DIN7A-PP-C-GF-ST-CA8/ DIN7A-J-P-G-ST-TH1

**Signal pin**

- **Initial** ----- 14.6 mOhms Max
- **After 100 Cycles**
  - o <= +5.0 mOhms ----- 8 Points ----- Stable
  - o +5.1 to +10.0 mOhms ----- 0 Points ----- Minor
  - o +10.1 to +15.0 mOhms ----- 0 Points ----- Acceptable
  - o +15.1 to +50.0 mOhms ----- 0 Points ----- Marginal
  - o +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
  - o >+2000 mOhms ----- 0 Points ----- Open Failure
- **After thermal ageing**
  - o <= +5.0 mOhms ----- 8 Points ----- Stable
  - o +5.1 to +10.0 mOhms ----- 0 Points ----- Minor
  - o +10.1 to +15.0 mOhms ----- 0 Points ----- Acceptable
  - o +15.1 to +50.0 mOhms ----- 0 Points ----- Marginal
  - o +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
  - o >+2000 mOhms ----- 0 Points ----- Open Failure
- **After humidity**
  - o <= +5.0 mOhms ----- 8 Points ----- Stable
  - o +5.1 to +10.0 mOhms ----- 0 Points ----- Minor
  - o +10.1 to +15.0 mOhms ----- 0 Points ----- Acceptable
  - o +15.1 to +50.0 mOhms ----- 0 Points ----- Marginal
  - o +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
  - o >+2000 mOhms ----- 0 Points ----- Open Failure

**Ground pin:**

- **Initial** ----- 2.4 mOhms Max
- **After 100 Cycles**
  - o <= +5.0 mOhms ----- 8 Points ----- Stable
  - o +5.1 to +10.0 mOhms ----- 0 Points ----- Minor
  - o +10.1 to +15.0 mOhms ----- 0 Points ----- Acceptable
  - o +15.1 to +50.0 mOhms ----- 0 Points ----- Marginal
  - o +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
  - o >+2000 mOhms ----- 0 Points ----- Open Failure

**RESULTS Continued**

- **After thermal ageing**
  - o <= +5.0 mOhms ----- 8 Points ----- Stable
  - o +5.1 to +10.0 mOhms ----- 0 Points ----- Minor
  - o +10.1 to +15.0 mOhms ----- 0 Points ----- Acceptable
  - o +15.1 to +50.0 mOhms ----- 0 Points ----- Marginal
  - o +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
  - o >+2000 mOhms ----- 0 Points ----- Open Failure
- **After humidity**
  - o <= +5.0 mOhms ----- 6 Points ----- Stable
  - o +5.1 to +10.0 mOhms ----- 2 Points ----- Minor
  - o +10.1 to +15.0 mOhms ----- 0 Points ----- Acceptable
  - o +15.1 to +50.0 mOhms ----- 0 Points ----- Marginal
  - o +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
  - o >+2000 mOhms ----- 0 Points ----- Open Failure

**LLCR Gas Tight (8 signal pin LLCR test points and 8 ground pin LLCR test points)**

DIN7A-PP-C-GF-ST-CA3 &amp; DIN7A-PP-C-GF-ST-CA8/ DIN7A-J-P-G-ST-TH1

**Signal Pin:**

- **Initial** ----- 97.0 mOhms Max
- **Gas-Tight**
  - o <= +5.0 mOhms ----- 8 Points ----- Stable
  - o +5.1 to +10.0 mOhms ----- 0 Points ----- Minor
  - o +10.1 to +15.0 mOhms ----- 0 Points ----- Acceptable
  - o +15.1 to +50.0 mOhms ----- 0 Points ----- Marginal
  - o +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
  - o >+2000 mOhms ----- 0 Points ----- Open Failure

**Ground Pin:**

- **Initial** ----- 11.7 mOhms Max
- **Gas-Tight**
  - o <= +5.0 mOhms ----- 8 Points ----- Stable
  - o +5.1 to +10.0 mOhms ----- 0 Points ----- Minor
  - o +10.1 to +15.0 mOhms ----- 0 Points ----- Acceptable
  - o +15.1 to +50.0 mOhms ----- 0 Points ----- Marginal
  - o +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
  - o >+2000 mOhms ----- 0 Points ----- Open Failure

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**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA SUMMARIES****CONTACT GAPS:****DIN7A-J-P-G-ST-TH1**

| Initial         |        | After 100 Cycles |        |
|-----------------|--------|------------------|--------|
| Units: mm       |        | Units: mm        |        |
| <i>Minimum</i>  | 0.3600 | <i>Minimum</i>   | 0.3601 |
| <i>Maximum</i>  | 0.3805 | <i>Maximum</i>   | 0.3711 |
| <i>Average</i>  | 0.3686 | <i>Average</i>   | 0.3661 |
| <i>St. Dev.</i> | 0.0061 | <i>St. Dev.</i>  | 0.0037 |
| <i>Count</i>    | 10     | <i>Count</i>     | 10     |

**DIN7A-PP-C-CF-ST-CA3**

| Initial         |        | After 100 Cycles |        |
|-----------------|--------|------------------|--------|
| Units: mm       |        | Units: mm        |        |
| <i>Minimum</i>  | 3.1092 | <i>Minimum</i>   | 3.0913 |
| <i>Maximum</i>  | 3.1802 | <i>Maximum</i>   | 3.1684 |
| <i>Average</i>  | 3.1367 | <i>Average</i>   | 3.1261 |
| <i>St. Dev.</i> | 0.0170 | <i>St. Dev.</i>  | 0.0182 |
| <i>Count</i>    | 20     | <i>Count</i>     | 20     |

**DIN7A-J-P-G-ST-TH1**

| Initial         |        |
|-----------------|--------|
| Units: mm       |        |
| <i>Minimum</i>  | 0.3659 |
| <i>Maximum</i>  | 0.3819 |
| <i>Average</i>  | 0.3722 |
| <i>St. Dev.</i> | 0.0055 |
| <i>Count</i>    | 9      |

**DIN7A-P-C-G-ST-CA3-PIN**

| Initial         |        | After Thermal   |        |
|-----------------|--------|-----------------|--------|
| Units: mm       |        | Units: mm       |        |
| <i>Minimum</i>  | 0.3609 | <i>Minimum</i>  | 0.3801 |
| <i>Maximum</i>  | 0.3729 | <i>Maximum</i>  | 0.4020 |
| <i>Average</i>  | 0.3672 | <i>Average</i>  | 0.3872 |
| <i>St. Dev.</i> | 0.0042 | <i>St. Dev.</i> | 0.0060 |
| <i>Count</i>    | 10     | <i>Count</i>    | 10     |

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**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA SUMMARIES Continued****MATING/UNMATING:****DIN7A-PP-C-GF-ST-CA3 & DIN7A-PP-C-GF-ST-CA8/ DIN7A-J-P-G-ST-TH1**

|                | Initial          |             |          |             | After 25 Cycles |             |          |             |
|----------------|------------------|-------------|----------|-------------|-----------------|-------------|----------|-------------|
|                | Mating           |             | Unmating |             | Mating          |             | Unmating |             |
|                | Newton's         | Force (Lbs) | Newton's | Force (Lbs) | Newton's        | Force (Lbs) | Newton's | Force (Lbs) |
| Minimum        | 4.68             | 1.05        | 3.17     | 0.71        | 3.95            | 0.89        | 4.04     | 0.91        |
| Maximum        | 8.02             | 1.80        | 6.61     | 1.49        | 12.21           | 2.75        | 10.81    | 2.43        |
| <b>Average</b> | 5.70             | <b>1.28</b> | 4.59     | <b>1.03</b> | 6.33            | <b>1.42</b> | 6.21     | <b>1.40</b> |
| St Dev         | 1.26             | 0.28        | 1.19     | 0.27        | 3.09            | 0.70        | 2.38     | 0.54        |
| Count          | 10               | 10          | 10       | 10          | 10              | 10          | 10       | 10          |
|                | After 50 Cycles  |             |          |             | After 75 Cycles |             |          |             |
|                | Mating           |             | Unmating |             | Mating          |             | Unmating |             |
|                | Newton's         | Force (Lbs) | Newton's | Force (Lbs) | Newton's        | Force (Lbs) | Newton's | Force (Lbs) |
| Minimum        | 3.88             | 0.87        | 4.21     | 0.95        | 4.05            | 0.91        | 4.36     | 0.98        |
| Maximum        | 13.05            | 2.93        | 11.82    | 2.66        | 14.42           | 3.24        | 12.41    | 2.79        |
| <b>Average</b> | 6.59             | <b>1.48</b> | 6.48     | <b>1.46</b> | 6.91            | <b>1.55</b> | 6.66     | <b>1.50</b> |
| St Dev         | 3.46             | 0.78        | 2.64     | 0.59        | 3.71            | 0.83        | 2.70     | 0.61        |
| Count          | 10               | 10          | 10       | 10          | 10              | 10          | 10       | 10          |
|                | After 100 Cycles |             |          |             |                 |             |          |             |
|                | Mating           |             | Unmating |             |                 |             |          |             |
|                | Newton's         | Force (Lbs) | Newton's | Force (Lbs) |                 |             |          |             |
| Minimum        | 3.99             | 0.90        | 4.79     | 1.08        |                 |             |          |             |
| Maximum        | 16.68            | 3.75        | 12.52    | 2.82        |                 |             |          |             |
| <b>Average</b> | 7.56             | <b>1.70</b> | 7.01     | <b>1.58</b> |                 |             |          |             |
| St Dev         | 4.22             | 0.95        | 2.76     | 0.62        |                 |             |          |             |
| Count          | 10               | 10          | 10       | 10          |                 |             |          |             |

**COUPLING/DISENGAGEMENT:****RFB8T-78SP4-SING-0150/ DIN7A-J-P-G-ST-TH1**

|         | Cycle#1    |            | Cycle#2    |            | Cycle#3    |            | Cycle#4    |            | Cycle#5    |            |
|---------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|         | Pull Force | Push Force | Pull Force | Push Force | Pull Force | Push Force | Pull Force | Push Force | Pull Force | Push Force |
| Min.    | 0.95       | 0.71       | 0.95       | 1.06       | 0.95       | 0.77       | 0.95       | 1.10       | 2.42       | 2.65       |
| Max.    | 1.98       | 2.10       | 3.76       | 4.71       | 1.85       | 1.48       | 2.50       | 4.73       | 3.18       | 4.60       |
| Average | 1.36       | 1.31       | 2.52       | 3.11       | 1.31       | 1.05       | 1.65       | 2.57       | 2.82       | 3.47       |

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**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA SUMMARIES Continued****NORMAL FORCE (FOR CONTACTS TESTED O IN THE HOUSING):****DIN7A-PP-C-GF-ST-CA3 & DIN7A-PP-C-GF-ST-CA8/ DIN7A-J-P-G-ST-TH1**

- 1) Calibrated force gauges are used along with computer controlled positioning equipment.
- 2) Typically, 8-10 readings are taken and the averages reported.

**Inner contact:**

| Initial         | Deflections in inches Forces in Grams |               |               |               |               |               |               |               |               |               |            |
|-----------------|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|
|                 | <u>0.0003</u>                         | <u>0.0006</u> | <u>0.0009</u> | <u>0.0012</u> | <u>0.0015</u> | <u>0.0018</u> | <u>0.0021</u> | <u>0.0024</u> | <u>0.0027</u> | <u>0.0030</u> | <i>SET</i> |
| <b>Averages</b> | 17.35                                 | 35.08         | 52.30         | 69.56         | 85.68         | 101.70        | 118.46        | 133.86        | 149.78        | 161.25        | 0.0002     |
| <b>Min</b>      | 13.10                                 | 24.50         | 37.10         | 52.60         | 67.60         | 83.30         | 97.00         | 106.90        | 115.50        | 121.00        | 0.0001     |
| <b>Max</b>      | 24.10                                 | 49.80         | 74.60         | 99.40         | 121.90        | 145.70        | 168.10        | 187.50        | 209.00        | 223.90        | 0.0007     |
| <b>St. Dev</b>  | 4.039                                 | 8.026         | 11.772        | 15.113        | 17.138        | 20.276        | 23.070        | 25.508        | 29.357        | 30.346        | 0.0002     |
| <b>Count</b>    | 8                                     | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8          |

| After Thermals  | Deflections in inches Forces in Grams |               |               |               |               |               |               |               |               |               |            |
|-----------------|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|
|                 | <u>0.0003</u>                         | <u>0.0006</u> | <u>0.0009</u> | <u>0.0012</u> | <u>0.0015</u> | <u>0.0018</u> | <u>0.0021</u> | <u>0.0024</u> | <u>0.0027</u> | <u>0.0030</u> | <i>SET</i> |
| <b>Averages</b> | 22.30                                 | 47.00         | 71.20         | 95.15         | 118.25        | 140.85        | 164.01        | 186.01        | 207.05        | 220.69        | 0.0003     |
| <b>Min</b>      | 11.10                                 | 31.90         | 52.50         | 72.70         | 92.90         | 113.90        | 135.20        | 154.00        | 174.10        | 191.40        | 0.0002     |
| <b>Max</b>      | 27.70                                 | 56.70         | 83.60         | 108.10        | 134.80        | 159.10        | 183.90        | 207.90        | 229.80        | 241.10        | 0.0005     |
| <b>St. Dev</b>  | 5.600                                 | 7.975         | 9.756         | 11.617        | 13.240        | 14.701        | 16.123        | 18.124        | 18.928        | 16.767        | 0.0001     |
| <b>Count</b>    | 8                                     | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8          |

**Outer contact:**

| Initial         | Deflections in inches Forces in Grams |               |               |               |               |               |               |               |               |               |            |
|-----------------|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|
|                 | <u>0.0004</u>                         | <u>0.0008</u> | <u>0.0012</u> | <u>0.0016</u> | <u>0.0020</u> | <u>0.0024</u> | <u>0.0028</u> | <u>0.0032</u> | <u>0.0036</u> | <u>0.0040</u> | <i>SET</i> |
| <b>Averages</b> | 26.96                                 | 54.68         | 82.20         | 109.99        | 137.86        | 165.43        | 192.61        | 220.14        | 247.25        | 272.01        | 0.0001     |
| <b>Min</b>      | 20.70                                 | 44.60         | 68.30         | 93.30         | 117.60        | 141.10        | 164.70        | 189.00        | 212.60        | 235.00        | 0.0000     |
| <b>Max</b>      | 30.10                                 | 61.60         | 92.30         | 122.00        | 152.20        | 184.20        | 214.30        | 244.60        | 275.00        | 297.70        | 0.0001     |
| <b>St. Dev</b>  | 3.083                                 | 5.899         | 8.404         | 10.301        | 12.736        | 15.456        | 17.794        | 20.385        | 22.390        | 23.969        | 0.0001     |
| <b>Count</b>    | 8                                     | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8          |

| After Thermals  | Deflections in inches Forces in Grams |               |               |               |               |               |               |               |               |               |            |
|-----------------|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|
|                 | <u>0.0004</u>                         | <u>0.0008</u> | <u>0.0012</u> | <u>0.0016</u> | <u>0.0020</u> | <u>0.0024</u> | <u>0.0028</u> | <u>0.0032</u> | <u>0.0036</u> | <u>0.0040</u> | <i>SET</i> |
| <b>Averages</b> | 26.76                                 | 53.20         | 79.14         | 105.16        | 130.53        | 155.96        | 181.94        | 206.83        | 231.26        | 257.03        | 0.0001     |
| <b>Min</b>      | 23.00                                 | 44.30         | 65.50         | 85.60         | 107.80        | 127.20        | 147.70        | 167.10        | 186.80        | 206.60        | 0.0000     |
| <b>Max</b>      | 30.30                                 | 58.90         | 88.10         | 117.60        | 145.20        | 176.10        | 205.00        | 234.20        | 261.90        | 291.80        | 0.0002     |
| <b>St. Dev</b>  | 2.432                                 | 5.286         | 7.994         | 11.378        | 13.822        | 17.425        | 20.387        | 23.536        | 26.614        | 30.181        | 0.0001     |
| <b>Count</b>    | 8                                     | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8             | 8          |

**DATA SUMMARIES Continued****INSULATION RESISTANCE (IR):****RF179-78SP4-303030-150/ DIN7A-J-P-G-ST-TH1**

|          | Pin to Ground      |          |           |
|----------|--------------------|----------|-----------|
|          | Mated              | Unmated  | Unmated   |
| Minimum  | DIN7A-PP/DIN7A-J-P | DIN7A-PP | DIN7A-J-P |
| Initial  | 100000             | 100000   | 100000    |
| Thermal  | 100000             | 100000   | 100000    |
| Humidity | 100000             | 100000   | 100000    |

**DIELECTRIC WITHSTANDING VOLTAGE (DWV):****RF179-78SP4-303030-150/ DIN7A-J-P-G-ST-TH1**

| Voltage Rating Summary |                    |
|------------------------|--------------------|
| Minimum                | DIN7A-PP/DIN7A-J-P |
| Breakdown Voltage      | 1700               |
| Test Voltage           | 1275               |
| Working Voltage        | 425                |

| Pin to Ground               |        |
|-----------------------------|--------|
| Initial Test Voltage        | Passed |
| After Thermal Test Voltage  | Passed |
| After Humidity Test Voltage | Passed |

**INSULATION RESISTANCE (IR):****RFB6T-78SP4-303030-150/ DIN7A-J-P-G-RA-BH1**

|          | Pin to Ground    |          |         |
|----------|------------------|----------|---------|
|          | Mated            | Unmated  | Unmated |
| Minimum  | DIN7A-PP/DIN7A-J | DIN7A-PP | DIN7A-J |
| Initial  | 100000           | 100000   | 100000  |
| Thermal  | 100000           | 100000   | 100000  |
| Humidity | 100000           | 100000   | 100000  |

**DIELECTRIC WITHSTANDING VOLTAGE (DWV):****RFB6T-78SP4-303030-150/ DIN7A-J-P-G-RA-BH1**

| Voltage Rating Summary |                  |
|------------------------|------------------|
| Minimum                | DIN7A-PP/DIN7A-J |
| Breakdown Voltage      | 1100             |
| Test Voltage           | 825              |
| Working Voltage        | 275              |

| Pin to Ground               |        |
|-----------------------------|--------|
| Initial Test Voltage        | Passed |
| After Thermal Test Voltage  | Passed |
| After Humidity Test Voltage | Passed |

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

### DATA SUMMARIES Continued

#### CONNECTOR PULL:

**DIN7A-P-C-H-ST-CA3-PIN soldered to RG179 SIG 0°**

|         | Force (lbs) |
|---------|-------------|
| Minimum | <b>5.00</b> |
| Maximum | 8.00        |
| Average | 6.60        |

**RF179-78SP4-303030-0150 SIG & GND 0°**

|         | Force (lbs)  |
|---------|--------------|
| Minimum | <b>25.50</b> |
| Maximum | 33.50        |
| Average | 30.20        |

**RF179-78SP4-303030-0150/ DIN7A-J-P-G-ST-TH1 SIG & GND 0°**

|         | Force (lbs)  |
|---------|--------------|
| Minimum | <b>32.00</b> |
| Maximum | 43.50        |
| Average | 35.50        |

**DIN7A-P-C-H-ST-CA8-PIN soldered to Belden 1855A IG 0°**

|         | Force (lbs)  |
|---------|--------------|
| Minimum | <b>18.50</b> |
| Maximum | 20.00        |
| Average | 19.20        |

**RFB8T-78SP4-303030-0150 SIG & GND 0°**

|         | Force (lbs)  |
|---------|--------------|
| Minimum | <b>39.50</b> |
| Maximum | 46.00        |
| Average | 41.40        |

**DIN7A-P-C-G-ST-CA6-PIN soldered to Belden 1694A SIG 0°**

|         | Force (lbs)  |
|---------|--------------|
| Minimum | <b>37.50</b> |
| Maximum | 44.50        |
| Average | 41.60        |

**RFB6T-78SP4-303030-0150 SIG & GND 0°**

|         | Force (lbs)  |
|---------|--------------|
| Minimum | <b>39.50</b> |
| Maximum | 48.00        |
| Average | 43.30        |

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

### DATA SUMMARIES Continued

**RFB6T-78SP4-303030-0150/ DIN7A-J-P-G-RA-BH1 SIG & GND 0°**

|         | Force (lbs)  |
|---------|--------------|
| Minimum | <b>26.50</b> |
| Maximum | 31.50        |
| Average | 29.60        |

**RFB6T-78SP4-303030-0150/ DIN7A-J-P-G-RA-BH1 SIG & GND 90°**

|         | Force (lbs)  |
|---------|--------------|
| Minimum | <b>10.00</b> |
| Maximum | 12.00        |
| Average | 11.10        |

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

### DATA SUMMARIES Continued

#### LLCR Durability:

##### DIN7A-PP-C-GF-ST-CA3 & DIN7A-PP-C-GF-ST-CA8/ DIN7A-J-P-G-ST-TH1

- 1) A total of 192 points were measured.
- 2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
  - a.  $\leq +5.0$  mOhms: ----- Stable
  - b.  $+5.1$  to  $+10.0$  mOhms: ----- Minor
  - c.  $+10.1$  to  $+15.0$  mOhms: ----- Acceptable
  - d.  $+15.1$  to  $+50.0$  mOhms: ----- Marginal
  - e.  $+50.1$  to  $+2000$  mOhms ----- Unstable
  - f.  $>+2000$  mOhms: ----- Open Failure

#### Signal Pin:

|           |                           |                             |                          |                           |
|-----------|---------------------------|-----------------------------|--------------------------|---------------------------|
| Date      | 11/3/2010                 | 11/4/2010                   | 11/15/2010               | 11/30/2010                |
| am Temp C | 23                        | 23                          | 23                       | 23                        |
| RH        | 27%                       | 27%                         | 28%                      | 41%                       |
| Name      | Troy Cook                 | Troy Cook                   | Troy Cook                | Troy Cook                 |
| hm values | <b>Actual<br/>Initial</b> | <b>Delta<br/>100 Cycles</b> | <b>Delta<br/>Thermal</b> | <b>Delta<br/>Humidity</b> |
| Average   | 13.6                      | -0.2                        | 0.0                      | 0.0                       |
| St. Dev.  | 0.8                       | 0.3                         | 0.3                      | 0.2                       |
| Min       | 12.6                      | -0.6                        | -0.4                     | -0.4                      |
| Max       | 14.6                      | 0.2                         | 0.5                      | 0.3                       |
| Count     | 8                         | 8                           | 8                        | 8                         |

|                                      |          |
|--------------------------------------|----------|
| How many samples are being tested?   | <u>8</u> |
| How many contacts are on each board? | <u>1</u> |

|            | Stable | Minor | Acceptable | Marginal | Unstable | Open |
|------------|--------|-------|------------|----------|----------|------|
| 100 Cycles | 8      | 0     | 0          | 0        | 0        | 0    |
| Thermal    | 8      | 0     | 0          | 0        | 0        | 0    |
| Humidity   | 8      | 0     | 0          | 0        | 0        | 0    |

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

### DATA SUMMARIES Continued

#### Ground Pin:

|           |                           |                             |                          |                           |
|-----------|---------------------------|-----------------------------|--------------------------|---------------------------|
| Date      | 11/3/2010                 | 11/4/2010                   | 11/15/2010               | 11/30/2010                |
| am Temp C | 23                        | 23                          | 23                       | 23                        |
| RH        | 27%                       | 27%                         | 28%                      | 41%                       |
| Name      | Troy Cook                 | Troy Cook                   | Troy Cook                | Troy Cook                 |
| hm values | <b>Actual<br/>Initial</b> | <b>Delta<br/>100 Cycles</b> | <b>Delta<br/>Thermal</b> | <b>Delta<br/>Humidity</b> |
| Average   | 2.2                       | 0.3                         | 1.2                      | 3.5                       |
| St. Dev.  | 0.1                       | 0.3                         | 0.9                      | 2.1                       |
| Min       | 2.0                       | 0.0                         | 0.2                      | 1.1                       |
| Max       | 2.4                       | 0.7                         | 3.1                      | 6.9                       |
| Count     | 8                         | 8                           | 8                        | 8                         |

|                                      |          |
|--------------------------------------|----------|
| How many samples are being tested?   | <u>8</u> |
| How many contacts are on each board? | <u>1</u> |

|            | Stable | Minor | Acceptable | Marginal | Unstable | Open |
|------------|--------|-------|------------|----------|----------|------|
| 100 Cycles | 8      | 0     | 0          | 0        | 0        | 0    |
| Thermal    | 8      | 0     | 0          | 0        | 0        | 0    |
| Humidity   | 6      | 2     | 0          | 0        | 0        | 0    |

|                                      |                                                                                                                            |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | Part #: DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                            |

### DATA SUMMARIES Continued

#### GAS TIGHT:

##### DIN7A-PP-C-GF-ST-CA3 & DIN7A-PP-C-GF-ST-CA8/ DIN7A-J-P-G-ST-TH1

- 1) A total of 192 points were measured.
- 2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
  - a.  $\leq +5.0$  mOhms: ----- Stable
  - b.  $+5.1$  to  $+10.0$  mOhms: ----- Minor
  - c.  $+10.1$  to  $+15.0$  mOhms: ----- Acceptable
  - d.  $+15.1$  to  $+50.0$  mOhms: ----- Marginal
  - e.  $+50.1$  to  $+2000$  mOhms: ----- Unstable
  - f.  $>+2000$  mOhms: ----- Open Failure

#### Signal pin:

|                |                           |                            |
|----------------|---------------------------|----------------------------|
| Date           | 11/3/2010                 | 11/3/2010                  |
| Room Temp C    | 23                        | 23                         |
| RH             | 27%                       | 27%                        |
| Name           | Tony Wagoner              | Tony Wagoner               |
| Initial values | <b>Actual<br/>Initial</b> | <b>Delta<br/>Gas Tight</b> |
| Average        | 95.5                      | 0.2                        |
| St. Dev.       | 0.8                       | 1.0                        |
| Min            | 94.3                      | -1.6                       |
| Max            | 97.0                      | 1.6                        |
| Count          | 8                         | 8                          |

|                                      |          |
|--------------------------------------|----------|
| How many samples are being tested?   | <u>1</u> |
| How many contacts are on each board? | <u>8</u> |

|           | Stable | Minor | Acceptable | Marginal | Unstable | Open |
|-----------|--------|-------|------------|----------|----------|------|
| Gas Tight | 8      | 0     | 0          | 0        | 0        | 0    |

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

DATA SUMMARIES Continued

Ground Pin:

|           |                           |                            |
|-----------|---------------------------|----------------------------|
| Date      | 11/3/2010                 | 11/3/2010                  |
| um Temp C | 23                        | 23                         |
| RH        | 27%                       | 27%                        |
| Name      | Tony Wagoner              | Tony Wagoner               |
| hm values | <b>Actual<br/>Initial</b> | <b>Delta<br/>Gas Tight</b> |
| Average   | 7.8                       | 1.0                        |
| St. Dev.  | 2.5                       | 1.5                        |
| Min       | 4.4                       | -0.1                       |
| Max       | 11.7                      | 3.9                        |
| Count     | 8                         | 8                          |

|                                      |          |
|--------------------------------------|----------|
| How many samples are being tested?   | <u>1</u> |
| How many contacts are on each board? | <u>8</u> |

|           | Stable | Minor | Acceptable | Marginal | Unstable | Open |
|-----------|--------|-------|------------|----------|----------|------|
| Gas Tight | 8      | 0     | 0          | 0        | 0        | 0    |

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA****CONTACT GAPS****DIN7A-J-P-G-ST-TH1**

| Initial          |        |        |        |        |        |        |        |        |        |        |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Units: mm        |        |        |        |        |        |        |        |        |        |        |
| Pos.#            | B1     | B2     | B3     | B4     | B5     | B6     | B7     | B8     | B9     | B10    |
| 1                | 0.3701 | 0.3747 | 0.3600 | 0.3618 | 0.3680 | 0.3725 | 0.3662 | 0.3805 | 0.3649 | 0.3671 |
| After 100 Cycles |        |        |        |        |        |        |        |        |        |        |
| Units: mm        |        |        |        |        |        |        |        |        |        |        |
| Pos.#            | B1     | B2     | B3     | B4     | B5     | B6     | B7     | B8     | B9     | B10    |
| 1                | 0.3711 | 0.3651 | 0.3601 | 0.3650 | 0.3670 | 0.3620 | 0.3639 | 0.3659 | 0.3709 | 0.3699 |

**DIN7A-PP-C-CF-ST-CA3**

| Initial          |        |        |        |        |        |        |        |        |        |        |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Units: mm        |        |        |        |        |        |        |        |        |        |        |
| Pos.#            | B1     | B2     | B3     | B4     | B5     | B6     | B7     | B8     | B9     | B10    |
| 1                | 3.1092 | 3.1233 | 3.1407 | 3.1262 | 3.1187 | 3.1231 | 3.1268 | 3.1261 | 3.1322 | 3.1341 |
| 2                | 3.1197 | 3.1537 | 3.1802 | 3.1407 | 3.1611 | 3.1437 | 3.1462 | 3.1357 | 3.1357 | 3.1577 |
| After 100 Cycles |        |        |        |        |        |        |        |        |        |        |
| Units: mm        |        |        |        |        |        |        |        |        |        |        |
| Pos.#            | B1     | B2     | B3     | B4     | B5     | B6     | B7     | B8     | B9     | B10    |
| 1                | 3.1052 | 3.1460 | 3.1510 | 3.1341 | 3.1291 | 3.1380 | 3.1280 | 3.1189 | 3.1129 | 3.1349 |
| 2                | 3.0913 | 3.1015 | 3.1386 | 3.1223 | 3.1293 | 3.1213 | 3.1684 | 3.1074 | 3.1284 | 3.1144 |

**DIN7A-J-P-G-ST-TH1**

| Initial   |        |        |        |        |        |        |        |        |        |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Units: mm |        |        |        |        |        |        |        |        |        |
| Pos.#     | B1     | B2     | B3     | B4     | B5     | B6     | B7     | B8     | B9     |
| 1         | 0.3679 | 0.3659 | 0.3769 | 0.3689 | 0.3779 | 0.3819 | 0.3729 | 0.3689 | 0.3689 |

**DIN7A-P-C-G-ST-CA3-PIN**

| Initial       |        |        |        |        |        |        |        |        |        |        |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Units: mm     |        |        |        |        |        |        |        |        |        |        |
| Pos.#         | B1     | B2     | B3     | B4     | B5     | B6     | B7     | B8     | B9     | B10    |
| 1             | 0.3609 | 0.3639 | 0.3689 | 0.3709 | 0.3629 | 0.3709 | 0.3699 | 0.3629 | 0.3679 | 0.3729 |
| After Thermal |        |        |        |        |        |        |        |        |        |        |
| Units: mm     |        |        |        |        |        |        |        |        |        |        |
| Pos.#         | B1     | B2     | B3     | B4     | B5     | B6     | B7     | B8     | B9     | B10    |
| 1             | 0.3801 | 0.3851 | 0.402  | 0.3821 | 0.3869 | 0.3861 | 0.3879 | 0.3872 | 0.3902 | 0.3842 |

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**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA Continued****MATING/UNMATING:****DIN7A-PP-C-GF-ST-CA3 & DIN7A-PP-C-GF-ST-CA8/ DIN7A-J-P-G-ST-TH1**

| Sample# | Initial |          | After 25 Cycles |          | After 50 Cycles |          | After 75 Cycles |          |
|---------|---------|----------|-----------------|----------|-----------------|----------|-----------------|----------|
|         | Mating  | Unmating | Mating          | Unmating | Mating          | Unmating | Mating          | Unmating |
| 1       | 14.28   | 12.79    | 14.77           | 15.09    | 15.60           | 16.96    | 16.19           | 18.84    |
| 2       | 12.90   | 14.34    | 14.08           | 16.54    | 14.84           | 18.82    | 15.58           | 20.49    |
| 3       | 12.82   | 14.46    | 13.90           | 16.14    | 14.57           | 18.02    | 15.55           | 20.17    |
| 4       | 12.60   | 14.75    | 14.18           | 16.85    | 14.48           | 18.29    | 14.97           | 19.27    |
| 5       | 12.55   | 14.64    | 12.29           | 16.72    | 12.76           | 17.83    | 13.17           | 19.18    |
| 6       | 12.96   | 15.14    | 12.47           | 17.62    | 12.86           | 18.76    | 13.42           | 20.09    |
| 7       | 14.20   | 14.71    | 15.67           | 17.07    | 16.47           | 19.43    | 17.21           | 21.53    |
| 8       | 11.71   | 14.05    | 11.93           | 16.40    | 12.33           | 17.26    | 12.58           | 18.46    |

| Sample# | After 100 Cycles |          | After humidity |          |
|---------|------------------|----------|----------------|----------|
|         | Mating           | Unmating | Mating         | Unmating |
| 1       | 16.75            | 20.16    | 8.17           | 6.91     |
| 2       | 16.15            | 21.76    | 8.48           | 7.15     |
| 3       | 16.09            | 21.51    | 8.31           | 7.06     |
| 4       | 15.40            | 20.03    | 7.93           | 6.58     |
| 5       | 14.04            | 20.19    | 7.89           | 6.67     |
| 6       | 14.72            | 21.14    | 7.63           | 6.92     |
| 7       | 17.80            | 22.92    | 8.54           | 7.68     |
| 8       | 13.27            | 19.36    | 7.62           | 6.92     |

**COUPLING/DISENGAGEMENT:****RFB8T-78SP4-SING-0150/ DIN7A-J-P-G-ST-TH1**

| Sample# | Cycle#1    |            | Cycle#2    |            | Cycle#3    |            | Cycle#4    |            | Cycle#5    |            |
|---------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|         | Pull Force | Push Force | Pull Force | Push Force | Pull Force | Push Force | Pull Force | Push Force | Pull Force | Push Force |
| 1       | 0.95       | 0.71       | 3.37       | 4.71       | 1.11       | 0.77       | 0.95       | 1.10       | 2.81       | 3.30       |
| 2       | 1.14       | 0.98       | 1.74       | 2.54       | 0.97       | 0.87       | 2.01       | 1.99       | 2.61       | 4.60       |
| 3       | 1.29       | 1.29       | 0.95       | 1.06       | 0.95       | 0.90       | 1.00       | 1.83       | 3.08       | 3.18       |
| 4       | 1.44       | 1.45       | 2.78       | 3.58       | 1.85       | 1.48       | 1.77       | 3.21       | 2.42       | 2.65       |
| 5       | 1.98       | 2.10       | 3.76       | 3.65       | 1.66       | 1.25       | 2.50       | 4.73       | 3.18       | 3.64       |
| Min.    | 0.95       | 0.71       | 0.95       | 1.06       | 0.95       | 0.77       | 0.95       | 1.10       | 2.42       | 2.65       |
| Max.    | 1.98       | 2.10       | 3.76       | 4.71       | 1.85       | 1.48       | 2.50       | 4.73       | 3.18       | 4.60       |
| Average | 1.36       | 1.31       | 2.52       | 3.11       | 1.31       | 1.05       | 1.65       | 2.57       | 2.82       | 3.47       |

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**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA Continued****NORMAL FORCE (FOR CONTACTS TESTED O IN THE HOUSING):**

DIN7A-PP-C-GF-ST-CA3 &amp; DIN7A-PP-C-GF-ST-CA8/ DIN7A-J-P-G-ST-TH1

**Inner contact:**

| Initial  | Deflections in inches, Forces in Grams |        |        |        |        |        |        |        |        |        |        |
|----------|----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Sample # | 0.0003                                 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0021 | 0.0024 | 0.0027 | 0.0030 | SET    |
| 1        | 19.5                                   | 41.1   | 61.1   | 82.2   | 94.4   | 108.6  | 127.5  | 145.6  | 164.8  | 172.2  | 0.0001 |
| 2        | 13.1                                   | 29.8   | 46.0   | 63.7   | 83.0   | 103.5  | 122.9  | 139.8  | 161.9  | 169.5  | 0.0001 |
| 3        | 13.2                                   | 28.8   | 44.8   | 60.1   | 75.3   | 86.5   | 100.1  | 114.7  | 128.3  | 142.9  | 0.0001 |
| 4        | 13.2                                   | 24.5   | 37.1   | 52.6   | 67.6   | 84.0   | 100.4  | 115.1  | 130.1  | 145.3  | 0.0002 |
| 5        | 16.4                                   | 32.1   | 45.0   | 57.9   | 70.7   | 83.3   | 97.0   | 106.9  | 115.5  | 121.0  | 0.0004 |
| 6        | 19.6                                   | 37.7   | 55.8   | 70.2   | 85.5   | 99.1   | 112.5  | 126.3  | 138.4  | 150.7  | 0.0007 |
| 7        | 24.1                                   | 49.8   | 74.6   | 99.4   | 121.9  | 145.7  | 168.1  | 187.5  | 209.0  | 223.9  | 0.0002 |
| 8        | 19.7                                   | 36.8   | 54.0   | 70.4   | 87.0   | 102.9  | 119.2  | 135.0  | 150.2  | 164.5  | 0.0001 |

| After Thermals | Deflections in inches, Forces in Grams |        |        |        |        |        |        |        |        |        |        |
|----------------|----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Sample #       | 0.0003                                 | 0.0006 | 0.0009 | 0.0012 | 0.0015 | 0.0018 | 0.0021 | 0.0024 | 0.0027 | 0.0030 | SET    |
| 1              | 17.0                                   | 38.6   | 62.5   | 84.9   | 108.5  | 129.6  | 153.8  | 176.5  | 197.0  | 212.8  | 0.0003 |
| 2              | 23.4                                   | 48.9   | 71.4   | 96.9   | 118.3  | 141.1  | 162.9  | 182.8  | 205.7  | 220.9  | 0.0004 |
| 3              | 11.1                                   | 31.9   | 52.5   | 72.7   | 92.9   | 113.9  | 135.2  | 154.0  | 174.1  | 191.4  | 0.0003 |
| 4              | 23.0                                   | 47.8   | 70.7   | 92.5   | 113.7  | 133.5  | 152.9  | 171.9  | 190.2  | 205.1  | 0.0005 |
| 5              | 26.8                                   | 51.8   | 77.2   | 103.8  | 126.9  | 151.7  | 177.1  | 201.4  | 222.3  | 234.5  | 0.0002 |
| 6              | 23.4                                   | 48.5   | 73.9   | 98.8   | 122.6  | 145.5  | 169.5  | 193.2  | 215.8  | 226.0  | 0.0003 |
| 7              | 26.0                                   | 51.8   | 77.8   | 103.5  | 128.3  | 152.4  | 176.8  | 200.4  | 221.5  | 233.7  | 0.0003 |
| 8              | 27.7                                   | 56.7   | 83.6   | 108.1  | 134.8  | 159.1  | 183.9  | 207.9  | 229.8  | 241.1  | 0.0004 |

**Outer contact:**

| Initial  | Deflections in inches, Forces in Grams |        |        |        |        |        |        |        |        |        |        |
|----------|----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Sample # | 0.0004                                 | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0028 | 0.0032 | 0.0036 | 0.0040 | SET    |
| 1        | 26.0                                   | 53.2   | 81.6   | 109.7  | 138.0  | 164.4  | 192.8  | 220.7  | 249.0  | 267.3  | 0.0001 |
| 2        | 20.7                                   | 44.6   | 68.3   | 93.3   | 117.6  | 141.1  | 164.7  | 189.0  | 212.6  | 235.0  | 0.0001 |
| 3        | 25.8                                   | 50.2   | 74.2   | 100.9  | 125.5  | 151.8  | 176.4  | 201.9  | 227.0  | 249.9  | 0.0000 |
| 4        | 30.1                                   | 61.6   | 92.3   | 122.0  | 152.2  | 184.2  | 214.3  | 244.6  | 275.0  | 292.3  | 0.0000 |
| 5        | 28.9                                   | 59.5   | 87.7   | 117.5  | 148.4  | 177.6  | 206.4  | 235.9  | 263.8  | 294.6  | 0.0001 |
| 6        | 29.0                                   | 56.5   | 87.3   | 115.7  | 144.4  | 171.8  | 200.8  | 228.8  | 257.7  | 286.2  | 0.0001 |
| 7        | 29.4                                   | 60.5   | 89.3   | 119.0  | 148.7  | 179.5  | 207.7  | 238.6  | 265.7  | 297.7  | 0.0000 |
| 8        | 25.8                                   | 51.3   | 76.9   | 101.8  | 128.1  | 153.0  | 177.8  | 201.6  | 227.2  | 253.1  | 0.0000 |

| After Thermals | Deflections in inches, Forces in Grams |        |        |        |        |        |        |        |        |        |        |
|----------------|----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Sample #       | 0.0004                                 | 0.0008 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0028 | 0.0032 | 0.0036 | 0.0040 | SET    |
| 1              | 26.9                                   | 56.0   | 82.9   | 111.9  | 138.7  | 164.2  | 192.4  | 217.9  | 243.3  | 268.2  | 0.0001 |
| 2              | 30.3                                   | 58.2   | 85.6   | 112.5  | 138.3  | 165.9  | 191.7  | 217.0  | 241.6  | 268.1  | 0.0002 |
| 3              | 23.0                                   | 44.3   | 65.5   | 85.6   | 107.8  | 127.2  | 147.7  | 167.1  | 186.8  | 206.6  | 0.0002 |
| 4              | 24.8                                   | 48.3   | 70.7   | 92.4   | 113.2  | 134.3  | 156.8  | 177.7  | 196.7  | 217.9  | 0.0001 |
| 5              | 24.7                                   | 49.4   | 74.9   | 100.0  | 124.5  | 149.1  | 174.7  | 200.1  | 226.0  | 252.4  | 0.0000 |
| 6              | 28.8                                   | 58.9   | 88.1   | 117.6  | 145.2  | 176.1  | 205.0  | 234.2  | 261.9  | 291.8  | 0.0001 |
| 7              | 28.2                                   | 56.7   | 85.0   | 113.8  | 141.6  | 169.3  | 198.3  | 226.1  | 253.2  | 283.8  | 0.0000 |
| 8              | 27.4                                   | 53.8   | 80.4   | 107.5  | 134.9  | 161.6  | 188.9  | 214.5  | 240.6  | 267.4  | 0.0000 |

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA Continued****INSULATION RESISTANCE (IR):****RF179-78SP4-303030-150/ DIN7A-J-P-G-ST-TH1****Initial Insulation Resistance**

Measured In Meg Ohms

| Pin to Ground |                    |          |           |
|---------------|--------------------|----------|-----------|
|               | Mated              | A        | Unmated B |
|               | X                  | X        | X         |
| Sample#       | DIN7A-PP/DIN7A-J-P | DIN7A-PP | DIN7A-J-P |
| 110625-018    | 100000             | 100000   | 100000    |
| 110625-019    | 100000             | 100000   | 100000    |

**Thermal Insulation Resistance**

Measured In Meg Ohms

| Pin to Ground |                    |          |           |
|---------------|--------------------|----------|-----------|
|               | Mated              | A        | Unmated B |
|               | X                  | X        | X         |
| Sample#       | DIN7A-PP/DIN7A-J-P | DIN7A-PP | DIN7A-J-P |
| 110625-018    | 100000             | 100000   | 100000    |
| 110625-019    | 100000             | 100000   | 100000    |

**Humidity Insulation Resistance**

Measured In Meg Ohms

| Pin to Ground |                    |          |           |
|---------------|--------------------|----------|-----------|
|               | Mated              | A        | Unmated B |
|               | X                  | X        | X         |
| Sample#       | DIN7A-PP/DIN7A-J-P | DIN7A-PP | DIN7A-J-P |
| 110625-018    | 100000             | 100000   | 100000    |
| 110625-019    | 100000             | 100000   | 100000    |

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV):****RF179-78SP4-303030-150/ DIN7A-J-P-G-ST-TH1****Initial Breakdown Voltage****Test Voltage** *Until Breakdown Occurs***Pin to Ground****Mated****A****Unmated****B****X**

| Sample#    | DIN7A-PP/DIN7A-J-P | DIN7A-PP | DIN7A-J-P |
|------------|--------------------|----------|-----------|
| 110625-014 | 1700               | 1800     | 1700      |
| 110625-015 | 1700               | 1700     | 1800      |

**Initial DWV****Test Voltage= 1275****Pin to Ground****Mated****A****Unmated****B**

| Sample#    | DIN7A-PP/DIN7A-J-P | DIN7A-PP | DIN7A-J-P |
|------------|--------------------|----------|-----------|
| 110625-018 | 1275               | 1275     | 1275      |
| 110625-019 | 1275               | 1275     | 1275      |

**Thermal Test Voltage****Test Voltage= 1275****Pin to Ground****Mated****A****Unmated****B**

| Sample#    | DIN7A-PP/DIN7A-J-P | DIN7A-PP | DIN7A-J-P |
|------------|--------------------|----------|-----------|
| 110625-018 | 1275               | 1275     | 1275      |
| 110625-019 | 1275               | 1275     | 1275      |

**Humidity Test Voltage****Test Voltage= 1275****Pin to Ground****Mated****A****Unmated****B**

| Sample#    | DIN7A-PP/DIN7A-J-P | DIN7A-PP | DIN7A-J-P |
|------------|--------------------|----------|-----------|
| 110625-018 | 1275               | 1275     | 1275      |
| 110625-019 | 1275               | 1275     | 1275      |

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA Continued****INSULATION RESISTANCE (IR):****RFB6T-78SP4-303030-150/ DIN7A-J-P-G-RA-BH1**

| Initial Insulation Resistance |  |
|-------------------------------|--|
| Measured In Meg Ohms          |  |

| Pin to Ground |                  |           |         |
|---------------|------------------|-----------|---------|
| Mated         |                  | A Unmated | B       |
| X             |                  | X         | X       |
| Sample#       | DIN7A-PP/DIN7A-J | DIN7A-PP  | DIN7A-J |
| 110627-005    | 100000           | 100000    | 100000  |
| 110627-006    | 100000           | 100000    | 100000  |

| Thermal Insulation Resistance |  |
|-------------------------------|--|
| Measured In Meg Ohms          |  |

| Pin to Ground |                  |           |         |
|---------------|------------------|-----------|---------|
| Mated         |                  | A Unmated | B       |
| X             |                  | X         | X       |
| Sample#       | DIN7A-PP/DIN7A-J | DIN7A-PP  | DIN7A-J |
| 110627-005    | 100000           | 100000    | 100000  |
| 110627-006    | 100000           | 100000    | 100000  |

| Humidity Insulation Resistance |  |
|--------------------------------|--|
| Measured In Meg Ohms           |  |

| Pin to Ground |                  |           |         |
|---------------|------------------|-----------|---------|
| Mated         |                  | A Unmated | B       |
| X             |                  | X         | X       |
| Sample#       | DIN7A-PP/DIN7A-J | DIN7A-PP  | DIN7A-J |
| 110627-005    | 100000           | 100000    | 100000  |
| 110627-006    | 100000           | 100000    | 100000  |

**DATA Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV):****RFB6T-78SP4-303030-150/ DIN7A-J-P-G-RA-BH1****Initial Breakdown Voltage**Test Voltage *Until Breakdown Occurs***Pin to Ground**

Mated

A

Unmated

B

X

| Sample#    | DIN7A-PP/DIN7A-J | DIN7A-PP | DIN7A-J |
|------------|------------------|----------|---------|
| 110627-001 | 1200             | 1400     | 1800    |
| 110627-002 | 1100             | 1500     | 1900    |

**Initial DWV**

Test Voltage= 825

**Pin to Ground**

Mated

A

Unmated

B

| Sample#    | DIN7A-PP/DIN7A-J | DIN7A-PP | DIN7A-J |
|------------|------------------|----------|---------|
| 110627-005 | 825              | 825      | 825     |
| 110627-006 | 825              | 825      | 825     |

**Thermal Test Voltage**

Test Voltage= 825

**Pin to Ground**

Mated

A

Unmated

B

| Sample#    | DIN7A-PP/DIN7A-J | DIN7A-PP | DIN7A-J |
|------------|------------------|----------|---------|
| 110627-005 | 825              | 825      | 825     |
| 110627-006 | 825              | 825      | 825     |

**Humidity Test Voltage**

Test Voltage= 825

**Pin to Ground**

Mated

A

Unmated

B

| Sample#    | DIN7A-PP/DIN7A-J | DIN7A-PP | DIN7A-J |
|------------|------------------|----------|---------|
| 110627-005 | 825              | 825      | 825     |
| 110627-006 | 825              | 825      | 825     |

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA Continued****CONNECTOR PULL:****DIN7A-P-C-H-ST-CA3-PIN soldered to RG179 SIG 0°**

| Sample #  | Force (lbs) |
|-----------|-------------|
| 20        | 6           |
| <b>21</b> | <b>6</b>    |
| 22        | 8           |
| 23        | 5           |
| 24        | 8           |

**RF179-78SP4-303030-0150 SIG & GND 0°**

| Sample # | Force (lbs) |
|----------|-------------|
| 25       | 31          |
| 26       | 29          |
| 27       | 25.5        |
| 28       | 33.5        |
| 29       | 32          |

**RF179-78SP4-303030-0150/ DIN7A-J-P-G-ST-TH1 SIG & GND 0°**

| Sample # | Force (lbs) |
|----------|-------------|
| 30       | 34          |
| 31       | 34          |
| 32       | 32          |
| 33       | 43.5        |
| 34       | 34          |

**DIN7A-P-C-H-ST-CA8-PIN soldered to Belden 1855A IG 0°**

| Sample # | Force (lbs) |
|----------|-------------|
| 3        | 18.5        |
| 4        | 18.5        |
| 5        | 20.0        |
| 6        | 20.0        |
| 7        | 19.0        |

**RFB8T-78SP4-303030-0150 SIG & GND 0°**

| Sample # | Force (lbs) |
|----------|-------------|
| 3        | 40.5        |
| 4        | 40.5        |
| 5        | 40.5        |
| 6        | 46.0        |
| 7        | 39.5        |

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
RFB6T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

### DATA Continued

#### DIN7A-P-C-G-ST-CA6-PIN soldered to Belden 1694A SIG 0°

| Sample # | Force (lbs) |
|----------|-------------|
| 7        | 41.5        |
| 8        | 37.5        |
| 9        | 41.5        |
| 10       | 44.5        |
| 11       | 43          |

#### RFB6T-78SP4-303030-0150 SIG & GND 0°

| Sample # | Force (lbs) |
|----------|-------------|
| 12       | 39.5        |
| 13       | 41.5        |
| 14       | 44          |
| 15       | 43.5        |
| 16       | 48          |

#### RFB6T-78SP4-303030-0150/ DIN7A-J-P-G-RA-BH1 SIG & GND 0°

| Sample # | Force (lbs) |
|----------|-------------|
| 17       | 29.5        |
| 18       | 30.5        |
| 19       | 26.5        |
| 20       | 31.5        |
| 21       | 30          |

#### RFB6T-78SP4-303030-0150/ DIN7A-J-P-G-RA-BH1 SIG & GND 90°

| Sample # | Force (lbs) |
|----------|-------------|
| 1        | 11          |
| 2        | 12          |
| 3        | 11.5        |
| 4        | 11          |
| 5        | 10          |

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
 DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
 RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA Continued****LLCR Durability:****Ground Pin:**

|       | mOhm<br>values | Actual  | Delta      | Delta   | Delta    |
|-------|----------------|---------|------------|---------|----------|
| Board | Position       | Initial | 100 Cycles | Thermal | Humidity |
| 1     | P1             | 2.4     | 0.2        | 0.2     | 2.5      |
| 1     | P2             | 2.4     | 0.2        | 1.4     | 5.5      |
| 1     | P3             | 2.2     | 0.6        | 0.7     | 1.1      |
| 1     | P4             | 2.3     | 0.0        | 1.8     | 4.9      |
| 1     | P5             | 2.1     | 0.2        | 0.6     | 1.3      |
| 1     | P6             | 2.0     | 0.2        | 0.8     | 6.9      |
| 1     | P7             | 2.3     | 0.6        | 0.7     | 2.6      |
| 1     | P8             | 2.1     | 0.7        | 3.1     | 2.8      |

**Signal Pin:**

|       | mOhm<br>values | Actual  | Delta      | Delta   | Delta    |
|-------|----------------|---------|------------|---------|----------|
| Board | Position       | Initial | 100 Cycles | Thermal | Humidity |
| 1     | P1             | 14.6    | 0.0        | 0.5     | 0.2      |
| 1     | P3             | 13.6    | 0.2        | 0.1     | 0.1      |
| 1     | P6             | 13.6    | -0.1       | -0.3    | -0.4     |
| 1     | P7             | 14.6    | -0.5       | 0.1     | -0.1     |
| 1     | P10            | 12.6    | -0.2       | -0.1    | -0.1     |
| 1     | P11            | 13.0    | -0.2       | 0.4     | 0.0      |
| 1     | P14            | 14.1    | -0.6       | -0.4    | 0.3      |
| 1     | P16            | 12.6    | 0.1        | 0.0     | -0.1     |

Tracking Code: 110625\_Report\_Rev\_1

**Part #:** DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1  
DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1  
RFB8T-78SP4-303030-015

Part description: DIN7A-PP/DIN7A-J-P

**DATA Continued****LLCR Gas Tight  
Signal pin:**

|       | mOhm<br>values | Actual  | Delta     |
|-------|----------------|---------|-----------|
| Board | Position       | Initial | Gas Tight |
| 1     | P1             | 95.8    | 1.0       |
| 1     | P2             | 94.3    | 1.6       |
| 1     | P3             | 95.1    | 0.3       |
| 1     | P4             | 97.0    | 0.3       |
| 1     | P5             | 95.2    | -0.1      |
| 1     | P6             | 96.2    | -1.6      |
| 1     | P7             | 95.5    | -0.8      |
| 1     | P8             | 95.1    | 1.0       |

**Ground pin:**

|       | mOhm<br>values | Actual  | Delta     |
|-------|----------------|---------|-----------|
| Board | Position       | Initial | Gas Tight |
| 1     | P2             | 6.5     | 0.2       |
| 1     | P4             | 7.2     | 0.6       |
| 1     | P5             | 7.9     | 0.5       |
| 1     | P8             | 4.4     | 0.2       |
| 1     | P9             | 7.2     | -0.1      |
| 1     | P12            | 6.3     | -0.1      |
| 1     | P13            | 11.3    | 3.9       |
| 1     | P15            | 11.7    | 2.9       |

|                                      |                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Tracking Code: 110625_Report_Rev_1   | <b>Part #:</b> DIN7A-PP-C-GF-ST-CA3&CA8 /DIN7A-J-P-G-ST-TH1<br>DIN7A-PP-C-GF-ST-CA6/ DIN7A-J-P-G-RA-BH1<br>RFB8T-78SP4-303030-015 |
| Part description: DIN7A-PP/DIN7A-J-P |                                                                                                                                   |

### EQUIPMENT AND CALIBRATION SCHEDULES

**Equipment #:** MV-05

**Description:** 6" x 6" Video Measuring Machine

**Manufacturer:** Micro-Vu

**Model:** M3010838

**Serial #:** V9344

**Accuracy:** Last Cal: 2010-1-12, Next Cal: 2011-1-12

**Equipment #:** MO-01

**Description:** Micro-ohmmeter

**Manufacturer:** Keithley

**Model:** 580

**Serial #:** 0772740

**Accuracy:** Last Cal: 2010-4-30, Next Cal: 2011-4-30

**Equipment #:** THC-01

**Description:** Temperature/Humidity Chamber

**Manufacturer:** Thermotron

**Model:** SM-8-7800

**Serial #:** 30676

**Accuracy:** Last Cal: 08/16/2010, Next Cal: 02/16/2011

**Equipment #:** TCT-01

**Description:** Normal force analyzer

**Manufacturer:** Mecmesin Multitester

**Model:** Mecmesin Multitester 2.5-i

**Serial #:** 04-1041-04

**Accuracy:** Last Cal: 2010-5-21, Next Cal: 2011-5-20

**Equipment #:** HPM-01

**Description:** Hipot Megommeter

**Manufacturer:** Hipotronics

**Model:** H306B-A

**Serial #:** M9905004

**Accuracy:** 2 % Full Scale Accuracy

**Last Cal:** 11/30/2010, Next Cal: 11/30/2011

**Equipment #:** OV-03

**Description:** Cascade Tek Forced Air Oven

**Manufacturer:** Cascade Tek

**Model:** TFO-5

**Serial #:** 0500100

**Accuracy:** Temp. Stability: +/- .1C/C change in ambient

**Last Cal:** 2010-06-16, Next Cal: 2011-06-16