# CABLINE®-UA II Connector

Part No. Plug: 20496-#**T-## Receptacle: 20498-#**E-##

## Test Report

Product Specification no. PRS-1469

| Rev. | ECN | Date | Prepared by | Checked by | Approved by |
|---|---|---|---|---|---|
| 9 | T22027 | February 14, 2022 | S.Yamaguchi | T.Tanigawa | H.Ikari |
| 8 | T18009 | January 29, 2018 | R.Hoshino | K.Tanaka | M.Takemoto |
| 7 | T17122 | July 28, 2017 | R.Hoshino | K.Tanaka | M.Takemoto |
| 6 | T15107 | August 6, 2015 | R.Nishiyama | K.Narita | T.Takano |

**1. Purpose**

To evaluate the performance of CABLINE-UA II Connector in accordance with PRS-1469.

**2. Specimen**

(1) CABLINE-UA II PLUG CABLE ASS'Y (Part No. 20496-#**-##)
CABLINE-UA II PLUG HOUSING ASS'Y (Part No. 20497-#**T-##)
CABLINE-UA II PLUG METAL COVER (Part No. 2679-0**-#0)
(2) CABLINE-UA II RECEPTACLE ASS'Y (Part No. 20498-#**E-##)

**3. Test Sequence**

All the evaluations were performed in accordance with Table 1.Test Sequence.

**4. Result**

See Table 2-1 to 2-3, Graph 1 to 18. For the details of the testing conditions and requirements, see PRS-1469.
The "n" in the tables show the number of measurement points.

**5. Conclusion**

All the specimens met the requirements of PRS-1469.

Table.1 Test Sequence and Sample Quantity

| Test Item | Group | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | J | K | L | M |
| Contact Resistance | 2,6 | | 1,3,5 | 1,5 | 1,3 | 1,5 | 1,5,7 | 1,3 | 1,3 | | | |
| Insulation Resistance | | | | 2,6 | | 2,6 | 2,8 | | | | | |
| D. W. Voltage | | | | 3,7 | | 3,7 | 3,9 | | | | | |
| Temperature rising | | | | | | | | | | | | 1 |
| Mating Force | 1,5 | | | | | | | | | | | |
| Un-mating Force | 3,7 | | | | | | | | | | | |
| Durability | 4 | | | | | | 4 (10cycles) | | | | | |
| Contact Retention Force | | 1 | | | | | | | | | | |
| Cable Retention Force | 8 | | | | | | | | | | | |
| Vibration | | | 2 | | | | | | | | | |
| Shock | | | 4 | | | | | | | | | |
| Thermal Shock | | | | 4 | | | | | | | | |
| High Temperature Life | | | | | 2 | | | | | | | |
| Humidity (Steady State) | | | | | | 4 | | | | | | |
| Humidity (Cycling) | | | | | | | 6 | | | | | |
| Salt Water Spray | | | | | | | | 2 | | | | |
| H2S Gas | | | | | | | | | 2 | | | |
| Solder ability | | | | | | | | | | 1 | | |
| Soldering Heat Resistance | | | | | | | | | | | 1 | |
| Specimen Quantity. | 5 pcs. | 25 pos. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 15 pcs. | 15 pcs. | 5 pcs. |

※Numbers indicate sequence in which tests are performed.

Table 2-1 Test result

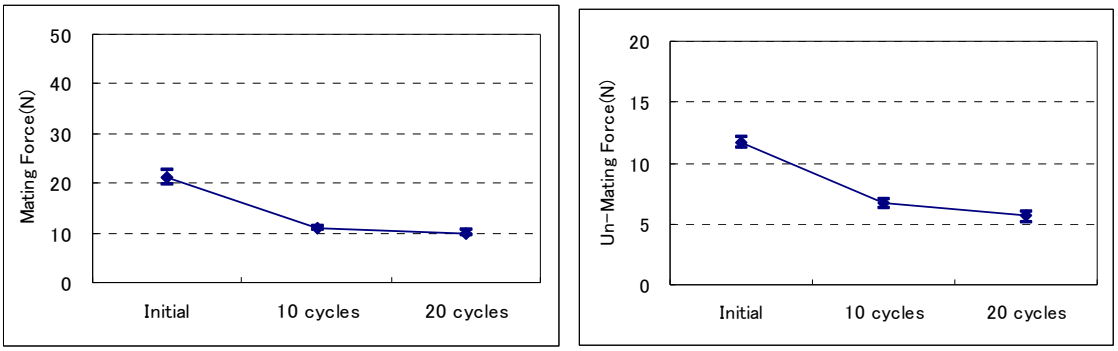
| Test Item | Contents of Measurement | | | Specification | Set | n | Data | | | | Judgement |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | AVE. | MAX. | MIN. | s | |
| A Group Durability ↓ Cable Retention Force | Contact Resistance (mΩ) | | Initial | AWG#44 1,080mΩMAX. | 5 | 250 | 872.67 | 900.1 | 846.9 | 12.30 | Pass |
| | | | After 20Cycles | AWG#44 ΔR=40mΩMAX. | | | 2.22 | 9.7 | -7.6 | 4.52 | Pass |
| | Ground Resistance (mΩ) | | Initial | 100mΩMAX. | 5 | – | 20.43 | 20.8 | 19.5 | – | Pass |
| | | | After 20Cycles | ΔR=40mΩMAX. | | | -0.32 | 3.8 | -8.3 | – | Pass |
| | 26P | Mating Force(N) | Initial | 28.0N MAX. | 5 | – | 21.24 | 22.5 | 19.7 | – | Pass |
| | | | After 20Cycles | 28.0N MAX. | | | 9.99 | 10.6 | 9.4 | – | Pass |
| | | Un-mating Force(N) | Initial | 3.0N MIN. | 5 | – | 11.70 | 12.1 | 11.2 | – | Pass |
| | | | After 20Cycles | 3.0N MIN. | | | 5.64 | 6.0 | 5.1 | – | Pass |
| | | Cable Retention Force | | 15.0N MIN. | 5 | – | 36.58 | 37.1 | 36.2 | – | Pass |
| | 32P | Mating Force(N) | Initial | 34.5N MAX. | 5 | – | 23.41 | 24.5 | 21.3 | – | Pass |
| | | | After 20Cycles | 34.5N MAX. | | | 13.32 | 13.9 | 12.8 | – | Pass |
| | | Un-mating Force(N) | Initial | 3.0N MIN. | 5 | – | 11.41 | 11.7 | 11.2 | – | Pass |
| | | | After 20Cycles | 3.0N MIN. | | | 5.91 | 6.2 | 5.4 | – | Pass |
| | | Cable Retention Force | | 15.0N MIN. | 5 | – | 33.40 | 34.7 | 32.4 | – | Pass |
| | 40P | Mating Force(N) | Initial | 40.0N MAX. | 5 | – | 30.83 | 32.6 | 29.6 | – | Pass |
| | | | After 20Cycles | 40.0N MAX. | | | 17.38 | 18.9 | 15.0 | – | Pass |
| | | Un-mating Force(N) | Initial | 3.0N MIN. | 5 | – | 10.41 | 10.9 | 9.9 | – | Pass |
| | | | After 20Cycles | 3.0N MIN. | | | 5.48 | 5.8 | 5.1 | – | Pass |
| | | Cable Retention Force | | 15.0N MIN. | 5 | – | 33.40 | 34.7 | 32.4 | – | Pass |
| | 50P | Mating Force(N) | Initial | 50.0N MAX. | 5 | – | 39.58 | 42.6 | 35.7 | – | Pass |
| | | | After 20Cycles | 50.0N MAX. | | | 19.20 | 20.2 | 17.6 | – | Pass |
| | | Un-mating Force(N) | Initial | 3.0N MIN. | 5 | – | 12.43 | 13.1 | 11.5 | – | Pass |
| | | | After 20Cycles | 3.0N MIN. | | | 6.52 | 7.1 | 5.8 | – | Pass |
| | | Cable Retention Force (N) | | 15.0N MIN. | 5 | – | 31.83 | 33.5 | 30.3 | – | Pass |
| B Group Contact Retention Force | Plug Contact Retention Force (N) | | | 0.6N MIN | – | 25 | It does not pull out even if it applies the power of 1.8N to a terminal. | | | | Pass |
| | Receptacle Contact Retention Force (N) | | | 0.2N MIN | – | 25 | 0.667 | 0.80 | 0.54 | – | Pass |

Table 2-2 Test result

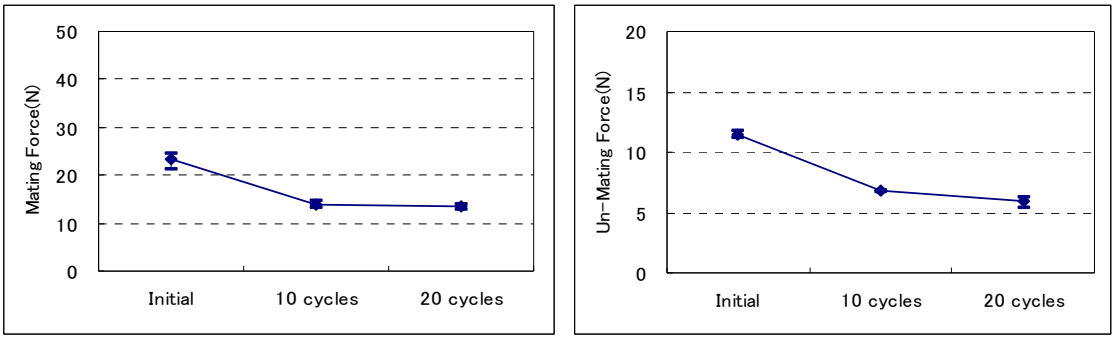
| Test Item | Contents of Measurement | | Specifications | Set | n | Data | | | | Judgement |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | AVE. | MAX. | MIN. | s | |
| C Group Vibration ↓ Shock | Contact Resistance (mΩ) | Initial | AWG#44 1,080mΩMAX | 5 | 250 | 843.48 | 912.2 | 808.0 | 12.59 | Pass |
| | | After Vibration | AWG#44 ΔR=40mΩMAX | | | 6.02 | 10.1 | -4.4 | 3.07 | Pass |
| | | After Shock | AWG#44 ΔR=40mΩMAX | | | 5.37 | 10.4 | -7.2 | 3.55 | Pass |
| | Ground Resistance (mΩ) | Initial | 100mΩMAX | 5 | – | 24.49 | 27.2 | 21.7 | – | Pass |
| | | After Vibration | ΔR=40mΩMAX | | | 0.92 | 3.5 | -0.5 | – | Pass |
| | | After Shock | ΔR=40mΩMAX | | | 0.52 | 3.2 | -0.7 | – | Pass |
| | Electrical Discontinuity | During Vibration/Shock | 1μsec. MAX | 5 | – | No abnormality | | | | Pass |
| | Appearance | After Vibration/Shock | No abnormality adversely affecting the performance shall occur. | 5 | – | No abnormality | | | | Pass |
| D Group Thermal Shock | Contact Resistance (mΩ) | Initial | AWG#44 1,080mΩMAX | 5 | 250 | 850.95 | 893.7 | 822.6 | 12.87 | Pass |
| | | After Testing | AWG#44 ΔR=40mΩMax | | | 4.87 | 9.7 | -4.4 | 3.35 | Pass |
| | Ground Resistance (mΩ) | Initial | 100mΩMAX | 5 | – | 24.74 | 27.4 | 22.0 | – | Pass |
| | | After Testing | ΔR=40mΩMA X | | | 0.50 | 1.1 | 0.4 | – | Pass |
| | Insulation Resistance (MΩ) | Initial | 100MΩMIN. | 5 | – | $6.8\times10^5$MΩ MIN. | | | | Pass |
| | | After Testing | 100MΩMIN. | | | $3.8\times10^4$MΩ MIN. | | | | Pass |
| | D.W.Voltage | | No creeping discharge, flashover, or insulator breakdown shall occur. | 5 | – | No abnormality | | | | Pass |
| E Group High Temperature Life | Contact Resistance (mΩ) | Initial | AWG#44 1,080mΩMAX | 5 | 250 | 837.37 | 871.6 | 800.2 | 18.04 | Pass |
| | | After Testing | AWG#44 ΔR=40mΩMAX | | | 0.92 | 8.8 | -4.7 | 3.68 | Pass |
| | Ground Resistance (mΩ) | Initial | 100mΩMAX | 5 | – | 22.38 | 25.0 | 18.9 | – | Pass |
| | | After Testing | ΔR=40mΩMAX | | | 0.71 | 2.7 | -1.6 | – | Pass |

Table.2-3 Test result

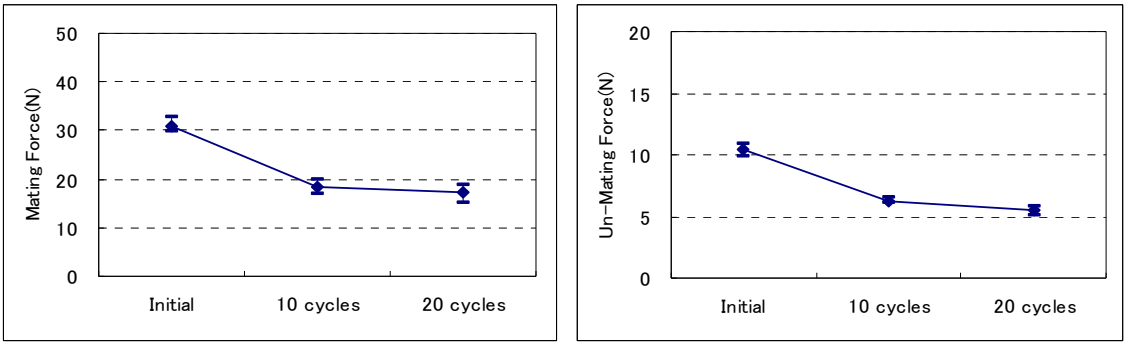
| Test Item | Contents of Measurement | | Specifications | Set | n | Data | | | | Judgement |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | AVE. | MAX. | MIN. | s | |
| F Group Humidity (Steady State) | Contact Resistance (mΩ) | Initial | AWG#44 1,080mΩMAX | 5 | 250 | 839.73 | 859.1 | 816.3 | 8.87 | Pass |
| | | After Testing | AWG#44 ΔR=40mΩMAX | | | 4.59 | 9.7 | -3.6 | 2.68 | Pass |
| | Ground Resistance (mΩ) | Initial | 100mΩMAX | 5 | – | 22.37 | 24.6 | 19.5 | – | Pass |
| | | After Testing | ΔR=40mΩMAX | | | 0.32 | 2.0 | -0.9 | – | Pass |
| | Insulation Resistance (MΩ) | Initial | 100MΩMIN. | 5 | – | $6.8\times10^5$MΩ MIN. | | | | Pass |
| | | After Testing | 100MΩMIN. | | | $3.0\times10^4$MΩ MIN. | | | | Pass |
| | D.W.Voltage | | No creeping discharge, flashover, or insulator breakdown shall occur. | 5 | – | No abnormality | | | | Pass |
| G Group Humidity Cycling | Contact Resistance (mΩ) | Initial | AWG#44 1,080mΩMAX | 5 | 250 | 836.42 | 853.8 | 816.1 | 7.06 | Pass |
| | | After Testing | AWG#44 ΔR=40mΩMAX | | | 4.73 | 9.2 | -3.2 | 2.31 | Pass |
| | Ground Resistance (mΩ) | Initial | 100mΩMAX | 5 | – | 22.37 | 24.6 | 19.5 | – | Pass |
| | | After Testing | ΔR=40mΩMAX | | | 0.32 | 2.1 | -1.0 | – | Pass |
| H Group Salt Water Spray | Contact Resistance (mΩ) | Initial | AWG#44 1,080mΩMAX | 5 | 250 | 852.25 | 878.6 | 827.9 | 8.54 | Pass |
| | | After Testing | AWG#44 ΔR=40mΩMAX | | | 5.90 | 9.7 | 1.1 | 1.93 | Pass |
| | Ground Resistance (mΩ) | Initial | 100mΩMAX | 5 | – | 24.00 | 26.9 | 21.0 | – | Pass |
| | | After Testing | ΔR=40mΩMAX | | | 0.12 | 0.8 | -0.8 | – | Pass |
| J Group Gas($H_2S$) | Contact Resistance (mΩ) | Initial | AWG#44 1,080mΩMAX | 5 | 250 | 861.65 | 918.9 | 811.7 | 25.02 | Pass |
| | | After Testing | AWG#44 ΔR=40mΩMAX | | | 5.48 | 9.9 | -6.5 | 4.56 | Pass |
| | Ground Resistance (mΩ) | Initial | 100mΩMAX | 5 | – | 25.30 | 28.2 | 22.3 | – | Pass |
| | | After Testing | ΔR=40mΩMAX | | | -0.18 | 0.5 | -1.1 | – | Pass |
| K Group Solder ability | Appearance | | More than 95% wet | 15 | – | Wet 95% MIN. | | | | Pass |
| L Group Soldering Heat Resistance | Appearance | | No deformation nor defect adversely affecting the performance occur. | 15 | – | No abnormality | | | | Pass |
| M Group Temperature Rising | AWG#46:0.15A | | ΔT=30℃MAX. | 5 | – | ⊿T= 26.7℃MAX | | | | Pass |
| | AWG#44:0.19A | | | | | ⊿T= 27.3℃MAX | | | | Pass |
| | AWG#42:0.20A | | | | | ⊿T= 25.7℃MAX | | | | Pass |



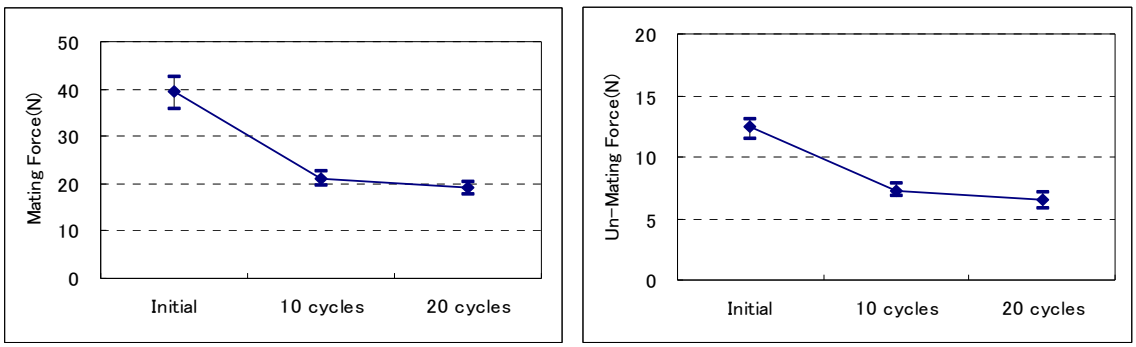

26P




32P




40P



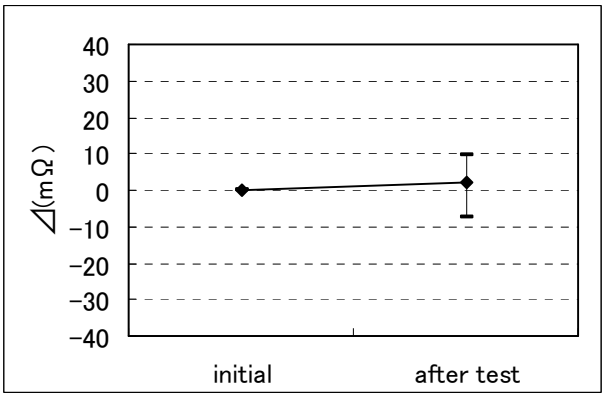

50P

Graph 1

A change of mating force (A Group: Durability)

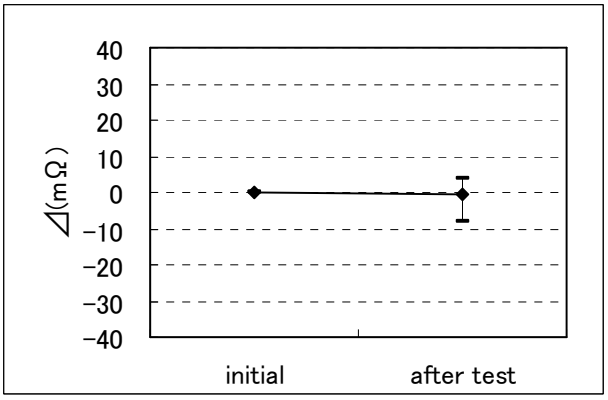
Graph 2

A change of un-mating force (A Group: Durability)



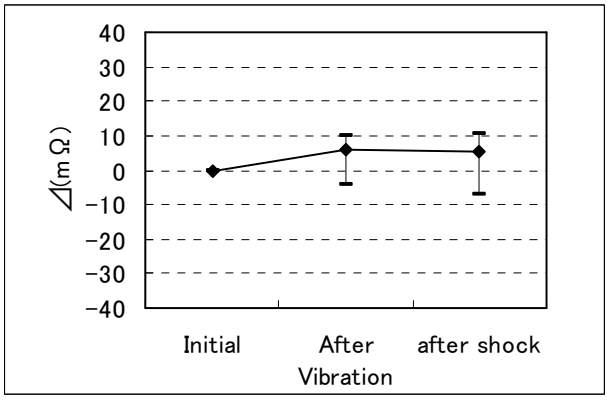

Graph 3

A change of contact resistance (A Group: Durability)



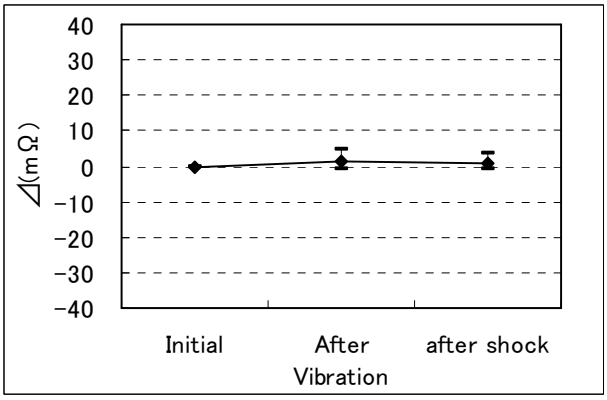

Graph 4

A change of ground resistance (A Group: Durability)



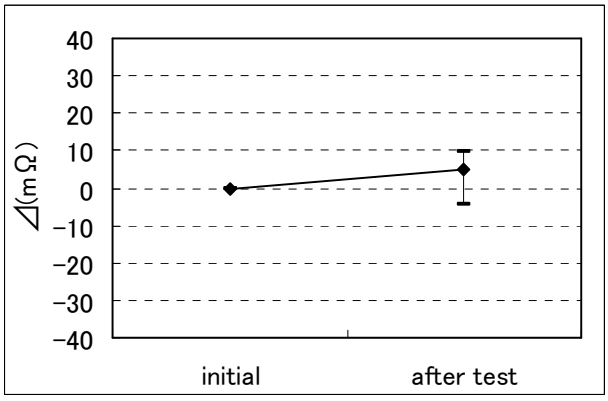

Graph 5

A change of contact resistance (C Group: Vibration/Shock)



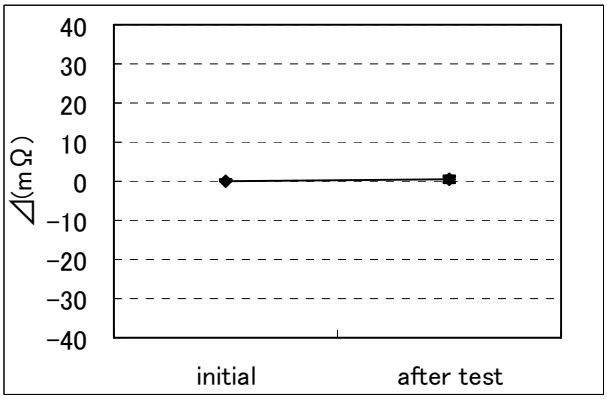

Graph 6

A change of ground resistance (C Group: Vibration/Shock)



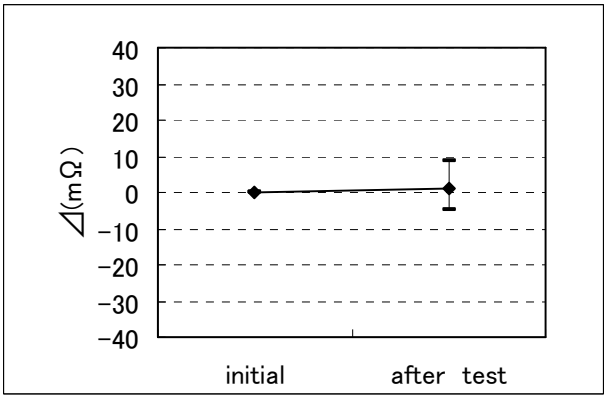

Graph 7

A change of contact resistance (D Group: Thermal shock)



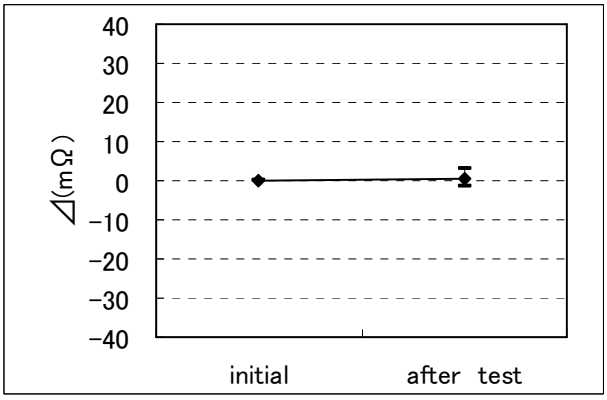

Graph 8

A change of ground resistance (D Group: Thermal shock)



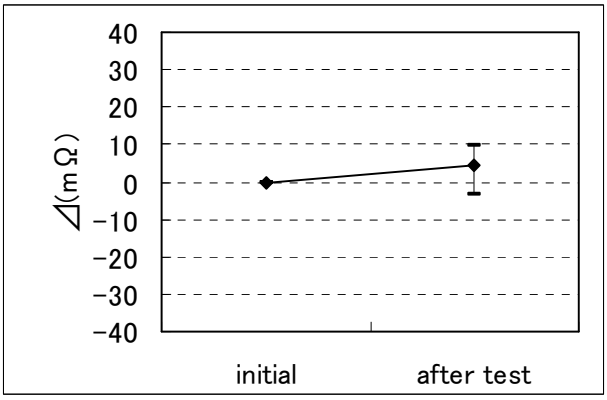

Graph 9

A change of contact resistance (E Group: High temperature life)



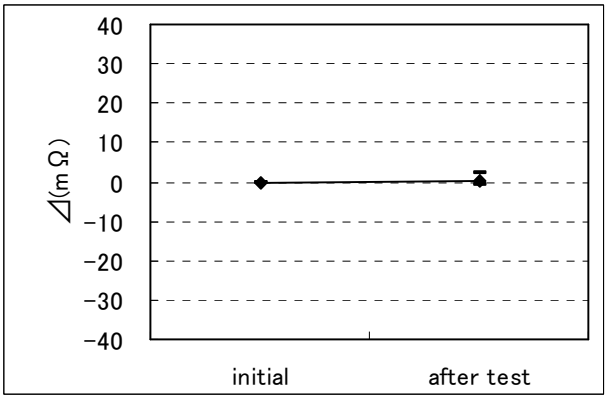

Graph 10

A change of ground resistance (E Group: High temperature life)



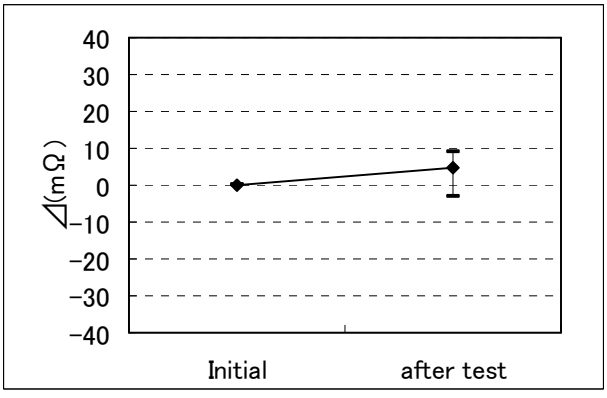

Graph 11

A change of contact resistance (F Group: Humidity(Steady state))



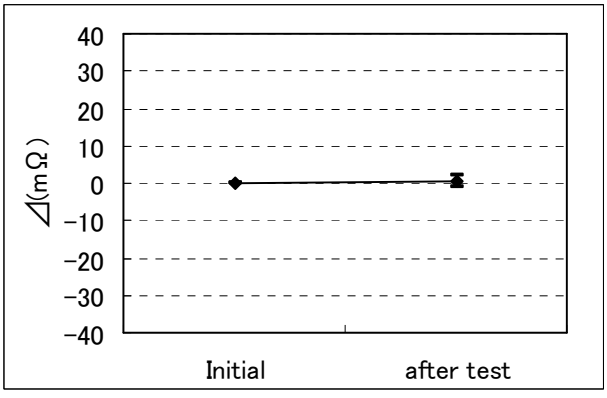

Graph 12

A change of ground resistance (F Group: Humidity (Steady state))



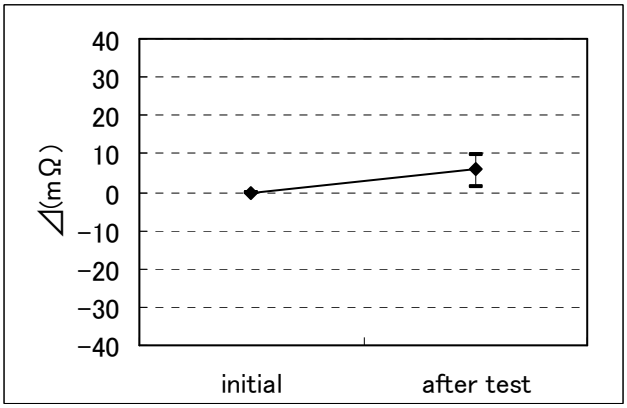

Graph 13

A change of contact resistance (G Group: Humidity (Cycling))



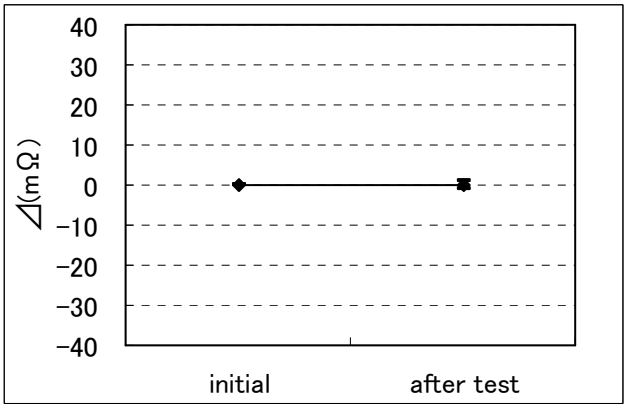

Graph 14

A change of ground resistance (G Group: Humidity (Cycling))



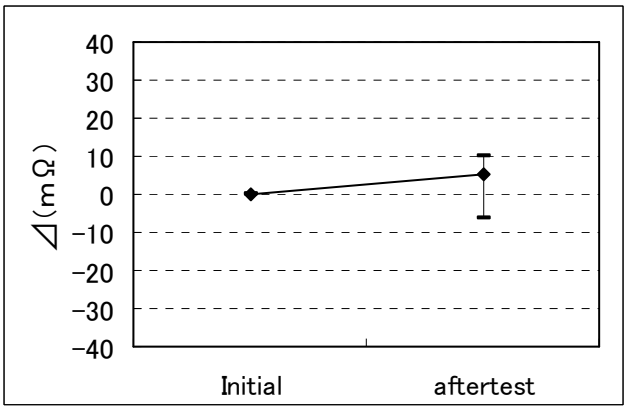

Graph 15

A change of contact resistance (H Group: Salt water spray)



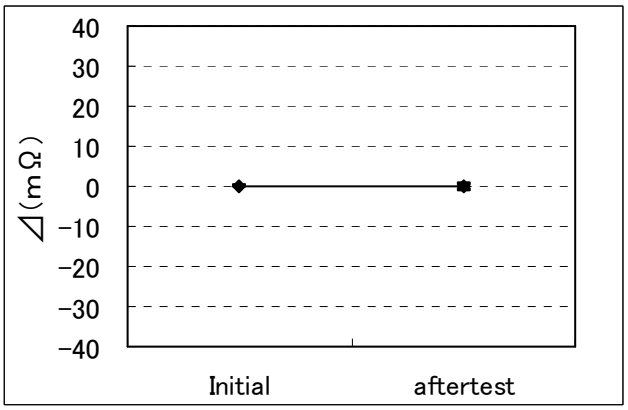

Graph 16

A change of ground resistance (H Group: Salt water spray)




Graph 17

A change of contact resistance (J Group: Gas ($H_2S$))




Graph 18

A change of ground resistance (J Group: Gas ($H_2S$))