

CABLINE®-CA II PLUS Connector

Part No. PLUG:20788-060T-01 RECEPTACLE:20790-060E-0#

Test Report

Product Specification no. PRS-2261

0	T16151	September 30, 2016	T.Masunaga	T.Kurachi	J.Tateishi
Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. 目的 / Purpose

CABLINE-CAII PLUS コネクタの性能を PRS-2261 に基づいて評価する。
To evaluate the performance of CABLINE-CAII PLUS Connector in accordance with PRS-2261.

2. 試料 / Specimen

- (1) CABLINE-CAII PLUS PLUG FOR CABLE ASS'Y (Part No. 20788-060T-01)
- (2) CABLINE-CAII PLUS RECEPTACLE ASS'Y (Part No. 20790-060E-0#)

3. 試験順序 / Test Sequence

全ての評価は表 1 の試験順序に従って行った。
All the evaluations were performed in accordance with Table 1. Test Sequence.

4. 結果 / Result

表 2-1～2-4、グラフ 1～18 参照。試験条件の詳細は PRS-2261 参照。
n 数は測定データを意味する。
See Table 2-1 to 2-4, Graph 1 to 18. For the details of the testing conditions and requirements, see PRS-2261.
The "n" in the tables show the number of measurement points.

5. 結論 / Conclusion

全ての資料が製品規格 (PRS-2261) の必要条件を満足した。
All the specimens met the requirements of PRS-2261.

表(Table)1 試験順序と試料数 / Test Sequence and Sample Quantity

試験項目 Test Item	グループ / Group												
	A	B	C	D	E	F	G	H	J	K	L	M	N
接触抵抗 Contact Resistance	2,6			1,3,5	1,3	1,3	1,5	1,5,7	1,3	1,3			
絶縁抵抗 Insulation Resistance							2,6	2,8					
耐電圧 D. W. Voltage							3,7	3,9					
温度上昇 Temperature Rising													1
挿入力 Mating Force	1,5												
抜去力 Unmating Force	3,7												
耐久性 Durability	4							4 (10cycles)					
端子保持力 Contact Retention Force		1,3											
コネクタロック強度 Conn. Lock			1										
ケーブル保持力 Cable Retention Force	8												
振動 Vibration				2									
衝撃 Shock				4									
熱衝撃 Thermal Shock					2								
高温寿命 High Temperature Life		2				2							
湿度 (定常状態) Humidity (SteadyState)							4						
湿度 (サイクリング) Humidity (Cycling)								6					
塩水噴霧 Salt Water Spray									2				
硫化水素ガス H ₂ S Gas										2			
半田付け性 Solderability											1		
半田耐熱性 Soldering Heat Resistance												1	
試料数 Sample QTY.	5pcs	20pcs	5pcs	5pcs	5pcs	5pcs	5pcs	5pcs	5pcs	5pcs	10pcs	10pcs	5pcs

※グループ表中の番号は、試験順序を示す。

The number of group is test sequence.

表 2-1. 試験結果 (Table.2-1 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	n	データ/Data					判定 Judge
						AVE.	MAX.	MIN.	s	X±3s	
A Group 耐久性 Durability	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#40 600mΩMAX.	5	300	498.735	504.97	492.44	2.138	505.149	OK
		30 回挿抜後 After Testing	AWG#40 ΔR=40mΩ MAX.			-1.144	4.28	-6.92	2.033	4.955	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	10.290	11.83	8.95	0.860	12.870	OK
		30 回挿抜後 After Testing	ΔR=40mΩ MAX.			-0.190	0.94	-1.33	0.519	1.367	OK
ケーブル 保持力 Cable Retention Force	挿入力 Mating Force (N)	初期 Initial	29.10N MAX.	5	5	13.466	13.82	13.05	0.301	14.369	OK
		30 回挿抜後 After Testing	29.10N MAX.			9.218	10.00	8.52	0.693	11.297	OK
	抜去力 Unmating Force (N)	初期 Initial	6.0N MIN.	5	5	9.386	9.67	8.96	0.261	8.603	OK
		30 回挿抜後 After Testing	6.0N MIN.			8.332	8.69	7.75	0.354	7.270	OK
	ケーブル保持力(N) Cable Retention Force		29.40N MIN.	5	5	197.766	201.64	194.86	2.548	190.122	OK
B Group 高温寿命 High Temperature Life	端子保持力 (PLUG) Contact Retention Force (N)	初期 Initial	0.6N MIN.	—	20	1.8N の力を加えても、端子の抜け無し It does not pull out, even if applies the power of 1.8N to a terminal.					OK
		試験後 After Testing	0.6N MIN.	—	20	1.8N の力を加えても、端子の抜け無し It does not pull out, even if applies the power of 1.8N to a terminal.					OK
	端子保持力 RECE) Contact Retention Force (N)	初期 Initial	0.2N MIN.	—	20	1.532	1.59	1.39	0.048	1.388	OK
		試験後 After Testing	0.2N MIN.	—	20	1.238	1.58	0.97	0.193	0.659	OK
C Group コネクタロック強度 Conn. Lock	初期 Initial	ロック機構が 破損、解除 しない事 The lock does not damage and cancel.	5	5	異常無し No Abnormality					OK	

表 2-2. 試験結果 (Table.2-2 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	n	データ/Data					判定 Judge
						AVE.	MAX.	MIN.	s	X±3s	
D Group 振動 Vibration ↓ 衝撃 Shock	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#40 600mΩMAX.	5	300	497.357	507.23	486.76	4.320	510.317	OK
		振動後 After Vibration	AWG#40 ΔR=40mΩ MAX.			0.265	5.21	-4.10	2.245	7.000	OK
		衝撃後 After Shock	AWG#40 ΔR=40mΩ MAX.			-0.098	5.52	-3.33	2.224	6.574	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	10.730	12.03	9.25	0.840	13.250	OK
		振動後 After Vibration	ΔR=40mΩ MAX.			-0.062	1.27	-1.42	0.918	2.692	OK
		衝撃後 After Shock	ΔR=40mΩ MAX.			0.095	1.22	-1.49	0.820	2.555	OK
	電氣的瞬断 Electrical discontinuity	振動試験中 During Vibration	1μsec. MAX.	5	5	瞬断無し No Electrical discontinuity					OK
		衝撃試験中 During Shock				瞬断無し No Electrical discontinuity					OK
	外観 Appearance	振動後 After Vibration	異常無き事 Abnormality shall not occur.	5	5	異常無し No Abnormality					OK
		衝撃後 After Shock				異常無し No Abnormality					OK
E Group 熱衝撃 Thermal Shock	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#40 600mΩMAX.	5	300	498.210	505.73	490.68	3.483	508.659	OK
		試験後 After Testing	AWG#40 ΔR=40mΩ MAX.			-0.887	4.05	-5.92	2.540	6.733	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	11.019	11.74	9.59	0.689	13.086	OK
		試験後 After Testing	ΔR=40mΩ MAX.			-0.244	0.90	-1.29	0.879	2.393	OK
F Group 高温寿命 High Temperature Life	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#40 600mΩMAX.	5	300	493.757	503.44	482.05	4.972	508.673	OK
		試験後 After Testing	AWG#40 ΔR=40mΩ MAX.			-0.121	3.28	-3.82	1.780	5.219	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	10.906	11.95	9.97	0.709	13.033	OK
		試験後 After Testing	ΔR=40mΩ MAX.			-0.319	0.67	-1.88	0.866	2.279	OK

表 2-3. 試験結果 (Table 2-3 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	n	データ/Data					判定 Judge
						AVE.	MAX.	MIN.	s	X±3s	
G Group 湿度 (定常状態) Humidity (Steady State)	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#40 600mΩMAX	5	300	495.934	504.45	485.36	4.436	509.242	OK
		試験後 After Testing	AWG#40 ΔR=40mΩ MAX.			0.663	4.13	-3.47	1.552	5.319	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	10.469	11.79	9.52	0.724	12.641	OK
		試験後 After Testing	ΔR=40mΩ MAX.			0.765	2.03	-0.85	0.925	3.540	OK
	絶縁抵抗 Insulation Resistance (MΩ)	初期 Initial	1000MΩMIN.	5	150	8.7×10 ⁴ MΩMIN.					OK
		試験後 After Testing	500MΩMIN.			3.0×10 ³ MΩMIN.					OK
	耐電圧 D. W. Voltage	初期 Initial	異常無き事 Abnormality shall not occur.	5	150	異常無し No Abnormality					OK
		試験後 After Testing				異常無し No Abnormality					OK
H Group 湿度 (サイクリング) Humidity (Cycling)	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#40 600mΩMAX.	5	300	499.591	507.97	489.78	3.977	511.522	OK
		耐久性後 After Durability	AWG#40 ΔR=40mΩ MAX.			-0.465	3.64	-3.68	1.626	4.413	OK
		試験後 After Testing	AWG#40 ΔR=40mΩ MAX.			0.311	5.29	-4.91	2.255	7.076	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	10.322	10.95	9.88	0.325	11.297	OK
		耐久性後 After Durability	ΔR=40mΩ MAX.			0.900	1.90	-0.48	0.661	2.883	OK
		試験後 After Testing	ΔR=40mΩ MAX.			0.032	0.80	-0.69	0.452	1.388	OK
	絶縁抵抗 Insulation Resistance (MΩ)	初期 Initial	1000MΩMIN.	5	150	1.1×10 ⁵ MΩMIN.					OK
		試験後 After Testing	500MΩMIN.			1.0×10 ³ MΩMIN.					OK
	耐電圧 D. W. Voltage	初期 Initial	異常無き事 Abnormality shall not occur.	5	150	異常無し No Abnormality					OK
		試験後 After Testing				異常無し No Abnormality					OK

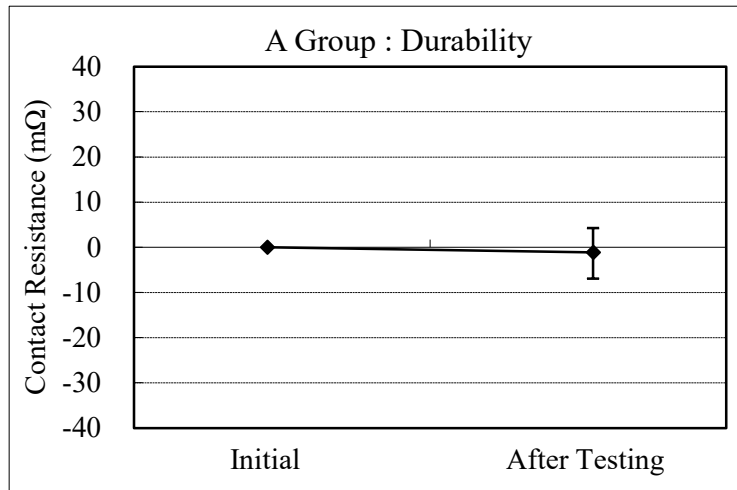
表 2-4. 試験結果 (Table 2-4 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	n	データ/Data					判定 Judge
						AVE.	MAX.	MIN.	s	X±3s	
J Group 塩水噴霧 Salt Water Spray	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#40 600mΩMAX.	5	300	494.309	506.65	479.22	5.381	510.452	OK
		試験後 After Testing	AWG#40 ΔR=40mΩ			0.772	4.52	-3.03	1.850	6.322	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	11.049	11.93	10.50	0.453	12.408	OK
		試験後 After Testing	ΔR=40mΩ MAX.			-0.055	1.09	-1.27	0.772	2.261	OK
K Group 硫化水素 ガス H2S Gas	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#40 600mΩMAX.	5	300	499.343	506.97	490.08	4.134	511.745	OK
		試験後 After testing	AWG#40 ΔR=40mΩ MAX.			1.226	3.72	-1.60	1.158	4.700	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	10.916	12.74	9.26	0.968	13.820	OK
		試験後 After Testing	ΔR=40mΩ MAX.			0.447	2.13	-1.14	0.938	3.261	OK
L Group 半田付け性 Solderability	外観 Appearance		95%以上 濡れる事 More than 95% of the dipped surface shall be evenly wet.	10	10	95%以上濡れる Wet 95% MIN.					OK
M Group 半田耐熱性 Soldering Heat Resistance	外観 Appearance		異常無き事 Abnormality shall not occur.	10	10	異常無し No Abnormality					OK
N Group 温度上昇 Temperature Rising	AWG#40 0.3A/Contact		ΔT=30℃ MAX.	5	5	ΔT=28.3℃MAX.					OK

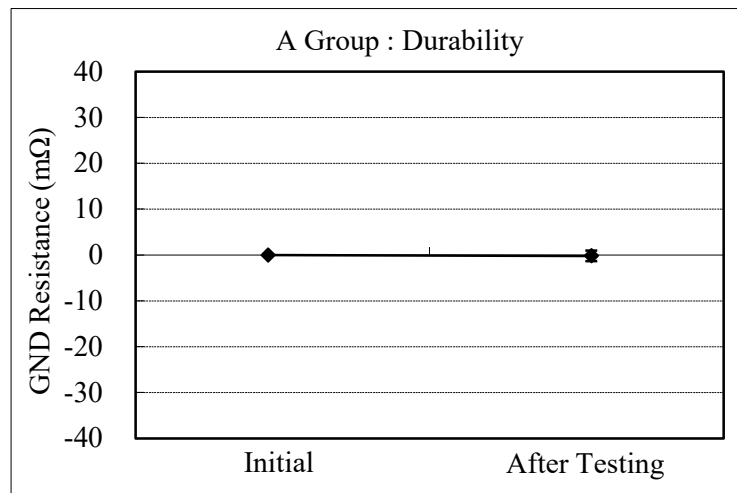
*温度上昇試験については、定格電流の 0.3A/Contact を隣接する 60 芯分（コネクタ全体で 18.0A）流した時の結果です。

The Temperature Rising Test is a result when applied ratings current (0.3A/contact) between the neighboring contacts for 60pos. (With the whole connector 18.0A.)

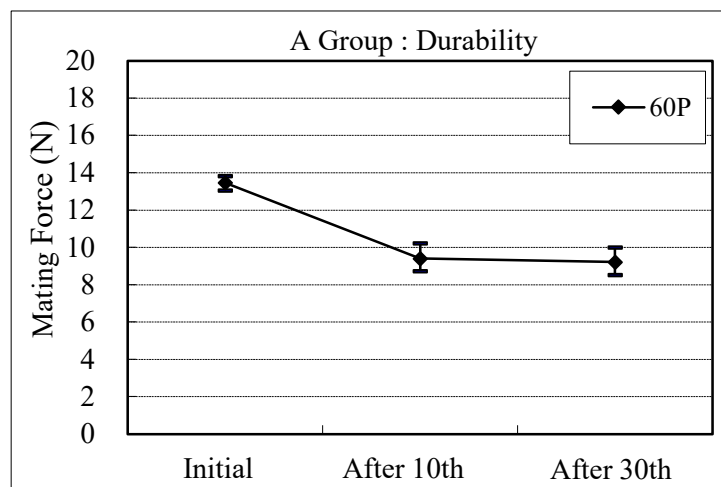
Graph.1



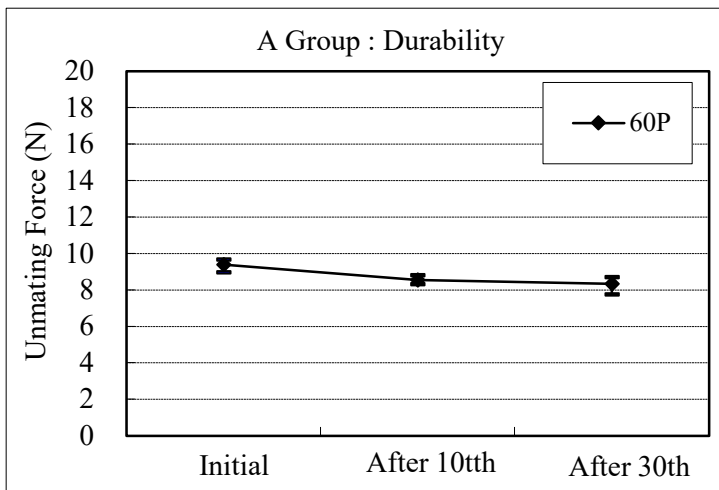
Graph.2



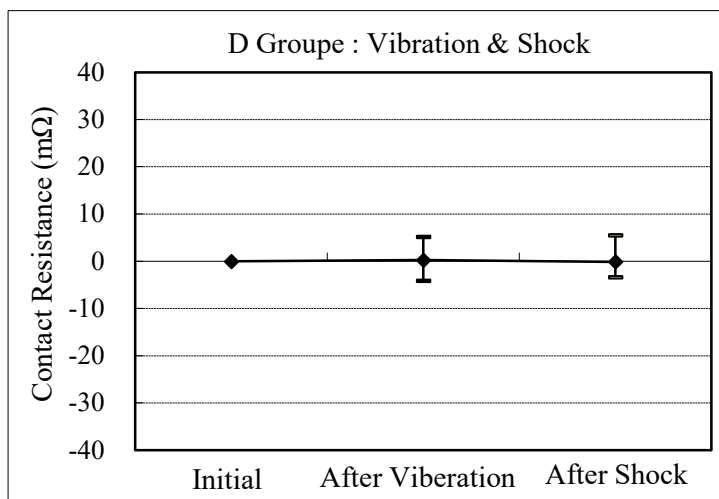
Graph.3



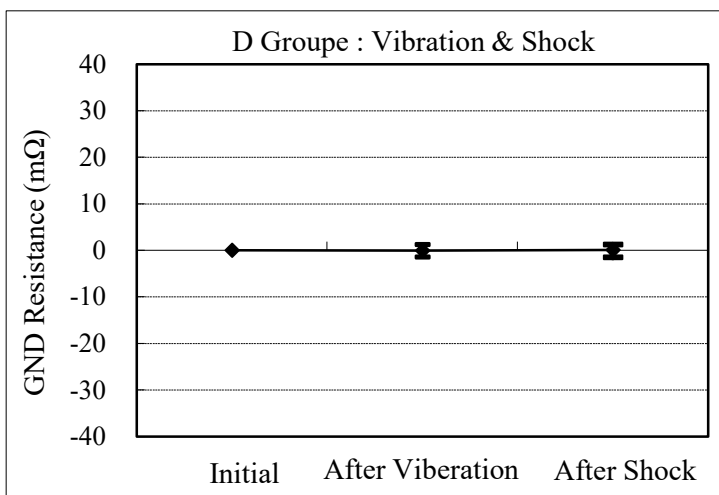
Graph.4



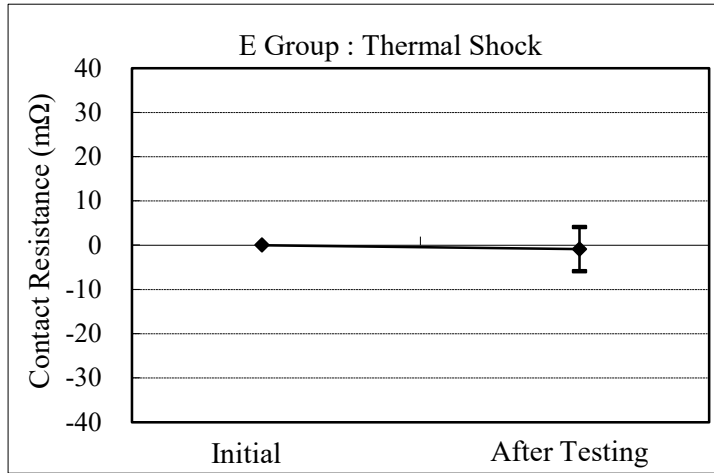
Graph.5



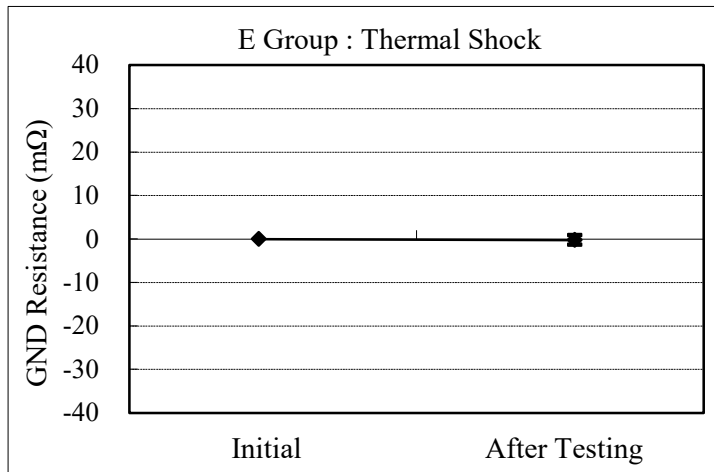
Graph.6



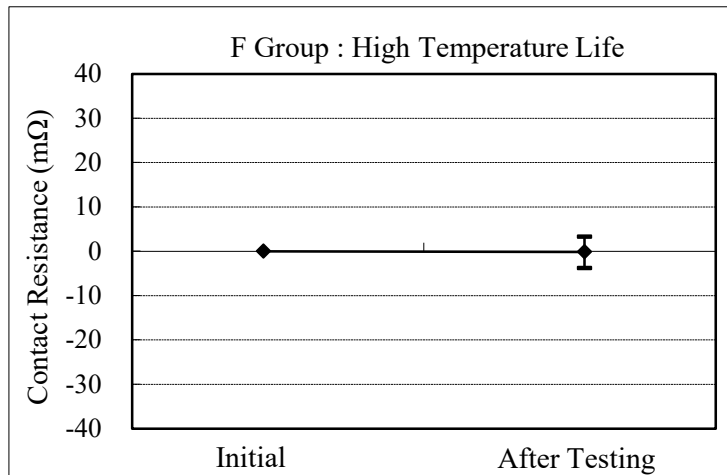
Graph.7



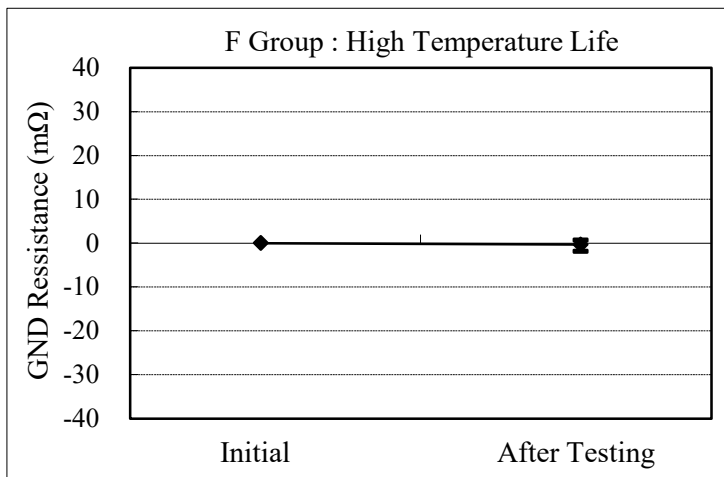
Graph.8



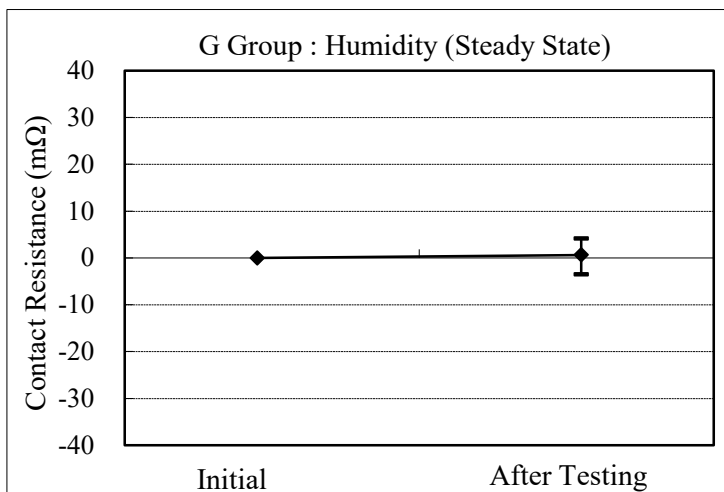
Graph.9



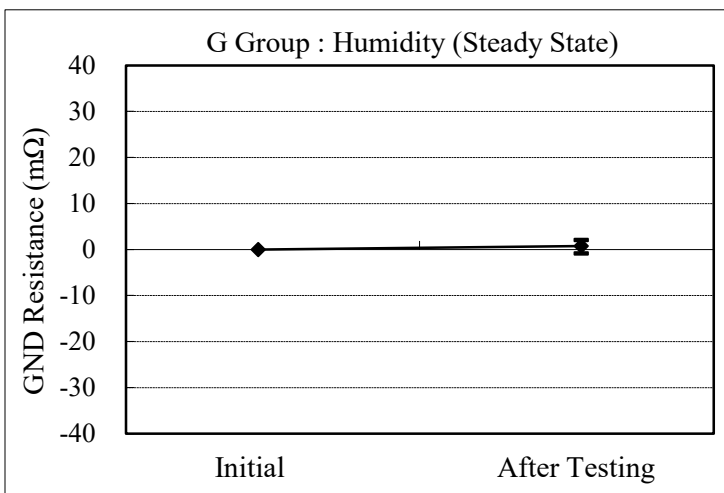
Graph.10



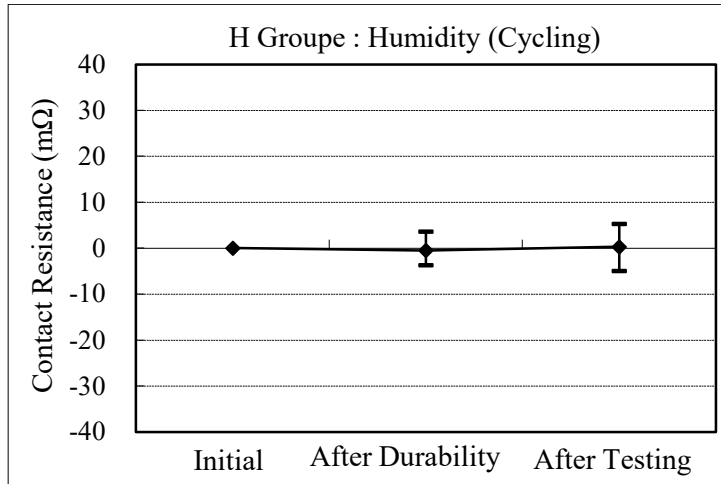
Graph.11



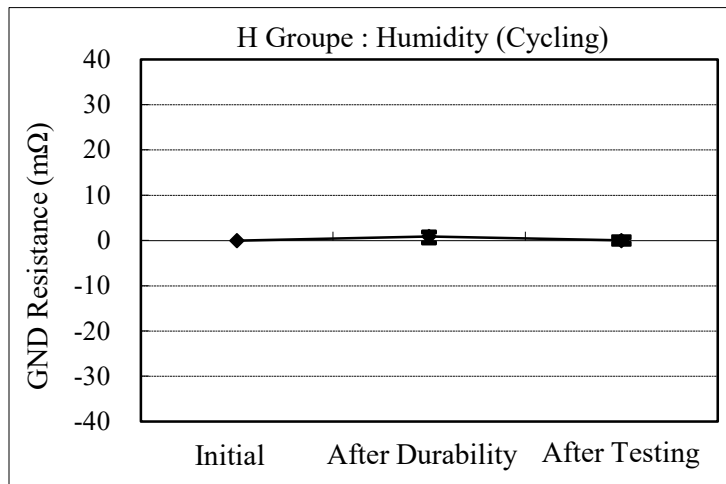
Graph.12



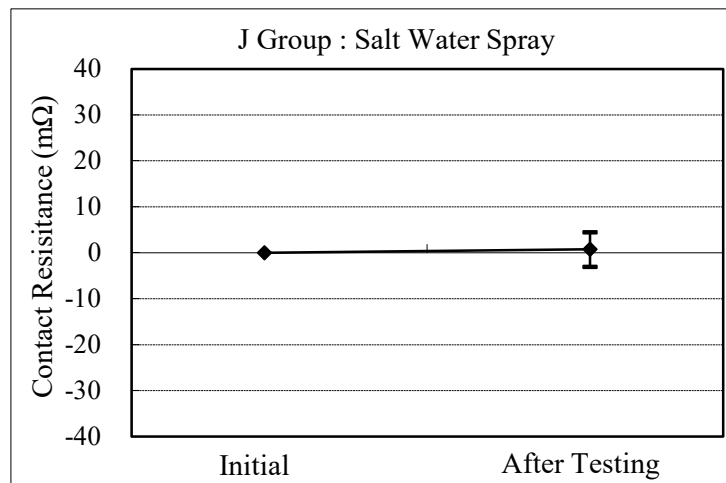
Graph.13



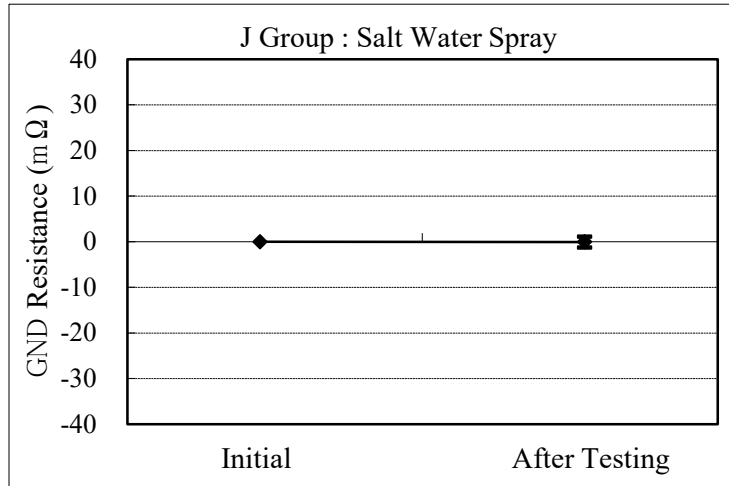
Graph.14



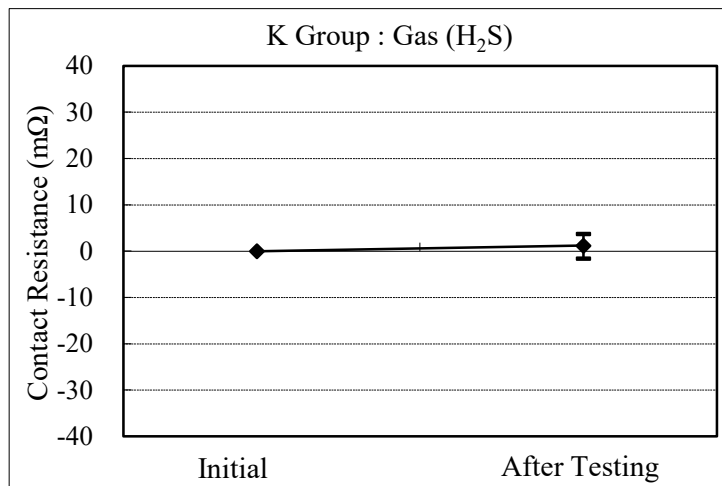
Graph.15



Graph.16



Graph.17



Graph.18

