CABLINE®-VS II

Part No. Plug: 20846-0**T-01, Receptacle: 20849-0**E-01

Test Report

Product Specification No. PRS-2398

Rev.	ECN	Date	Prepared by	Checked by	Approved by
3	T20048	July 23, 2020	T.Ono	T.Masunaga	H.Ikari
2	T19136	October 3, 2019	R.Morita	T.Masunaga	H.Ikari
1	T19053	May 21, 2019	T.Onishi	T.Kurachi	H.Ikari
0	T18066	June 12, 2018	T.Kurachi	-	Y.Shimada

1. Purpose

CABLINE-VS II コネクタの性能を PRS-2398 に基づいて評価する。
To evaluate the performance of CABLINE-VS II Connector in accordance with PRS-2398.

2. Specimen

(1) CABLINE-VS II PLUG ASS'Y （Part No. 20846-0**T-01）
(2) CABLINE-VS II RECE. ASS'Y （Part No. 20849-0**E-01）

3. 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. Result

表 2-1～2-4、グラフ 1～18 参照。試験条件の詳細は PRS-2398 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-2398.
The “n” in the tables show the number of measurement points.

5. Conclusion

全ての資料が製品規格（PRS-2398）の必要条件を満足した。
All the specimens met the requirements of PRS-2398.

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 Un-mating 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												
耐振動性 Vibration				2									
耐衝撃性 Shock				4									
熱衝撃 Thermal Shock					2								
高温寿命 High Temperature Life		2				2							
湿度（定常状態） Humidity (Steady State)							4						
湿度（サイクリング） Humidity (Cycling)								6					
塩水噴射 Salt Water Spray									2				
硫化水素ガス H2S Gas										2			
半田付け性 Solder ability											1		
半田耐熱性 Soldering Heat Resistance												1	
試料数 Specimen Quantity.	5pcs.	20pos.	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。／Numbers indicate sequence in which tests are performed.

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 AVE.	MAX.	MIN.	s	X±3s	判定 Judge
A Group 耐久性 Durability / ケーブル保持力 Cable Retention Force	接触抵抗 Contact Resistance (mΩ)		初期 Initial	AWG#36 275mΩMAX.	5	150	213.88	218.77	210.55	1.715	219.025	OK
			30 回挿抜後 After Testing	AWG#36 ΔR=40mΩ MAX.			-0.229	3.11	-3.50	1.140	3.191	OK
	GND 抵抗 GND Resistance (mΩ)		初期 Initial	50mΩMAX.	5	5	9.306	9.62	8.71	0.372	10.422	OK
			30 回挿抜後 After Testing	ΔR=40mΩ MAX.			-0.412	0.18	-0.94	0.486	1.046	OK
	20P	挿入力 Mating Force (N)	初期 Initial	9.70N MAX.	5	5	5.216	5.76	4.87	0.348	6.260	OK
			30 回挿抜後 After Testing	9.70N MAX.			3.798	3.93	3.64	0.138	4.212	OK
		抜去力 Unmating Force (N)	初期 Initial	2.00N MIN.	5	5	3.572	3.76	3.30	0.171	3.059	OK
			30 回挿抜後 After Testing	2.00N MIN.			3.170	3.54	2.85	0.251	2.417	OK
		ケーブル保持力(N) Cable Retention Force		9.80N MIN.	5	5	129.350	133.24	122.57	4.174	116.828	OK
	30P	挿入力 Mating Force (N)	初期 Initial	14.55N MAX.	5	5	6.890	7.00	6.65	0.137	7.301	OK
			30 回挿抜後 After Testing	14.55N MAX.			4.758	4.98	4.43	0.246	5.496	OK
		抜去力 Unmating Force (N)	初期 Initial	3.00N MIN.	5	5	4.516	4.65	4.39	0.092	4.240	OK
			30 回挿抜後 After Testing	3.00N MIN.			4.006	4.30	3.64	0.258	3.232	OK
		ケーブル保持力(N) Cable Retention Force		14.70N MIN.	5	5	128.068	134.23	121.18	6.115	109.723	OK
	40P	挿入力 Mating Force (N)	初期 Initial	19.40N MAX.	5	5	9.298	9.84	8.64	0.467	10.699	OK
			30 回挿抜後 After Testing	19.40N MAX.			6.524	7.00	6.00	0.391	7.697	OK
		抜去力 Unmating Force (N)	初期 Initial	4.00N MIN.	5	5	6.164	6.63	5.49	0.434	4.862	OK
			30 回挿抜後 After Testing	4.00N MIN.			5.502	5.91	5.10	0.370	4.392	OK
		ケーブル保持力(N) Cable Retention Force		19.60N MIN.	5	5	131.188	137.06	125.47	4.342	118.162	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	1.429	1.81	0.96	0.232	0.733	OK
			試験後 After Testing	0.2N MIN.	–	20	1.428	1.77	1.04	0.203	0.819	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 AVE.	MAX.	MIN.	s	X±3s	判定 Judge
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
D Group 振動 Vibration ↓ 衝撃 Shock	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#36 275mΩMAX.	5	150	216.379	220.96	211.34	1.864	221.971	OK
		振動後 After Vibration	AWG#36 ΔR=40mΩ MAX.			-0.329	2.82	-2.97	1.143	3.100	OK
		衝撃後 After Shock	AWG#36 ΔR=40mΩ MAX.			-1.043	1.44	-3.90	1.034	2.059	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	9.582	10.33	9.06	0.508	11.106	OK
		振動後 After Vibration	ΔR=40mΩ MAX.			0.318	0.75	-0.91	0.690	2.388	OK
		衝撃後 After Shock	ΔR=40mΩ MAX.			-0.568	-0.04	-1.78	0.701	1.535	OK
	電気的瞬断 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#36 275mΩMAX.	5	150	215.377	219.25	211.97	1.528	219.961	OK
		試験後 After Testing	AWG#36 ΔR=40mΩ MAX.			0.910	3.34	-1.57	1.080	4.150	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	9.682	9.98	9.45	0.224	10.354	OK
		試験後 After Testing	ΔR=40mΩ MAX.			-0.304	-0.07	-0.46	0.166	0.194	OK
F Group 高温寿命 High Temperature Life	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#36 275mΩMAX	5	150	215.486	218.73	212.46	1.303	219.395	OK
		試験後 After Testing	AWG#36 ΔR=40mΩ MAX.			2.268	5.75	-1.26	1.569	6.975	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	9.178	9.30	9.07	0.096	9.466	OK
		試験後 After Testing	ΔR=40mΩ MAX.			-0.322	-0.17	-0.71	0.224	0.350	OK

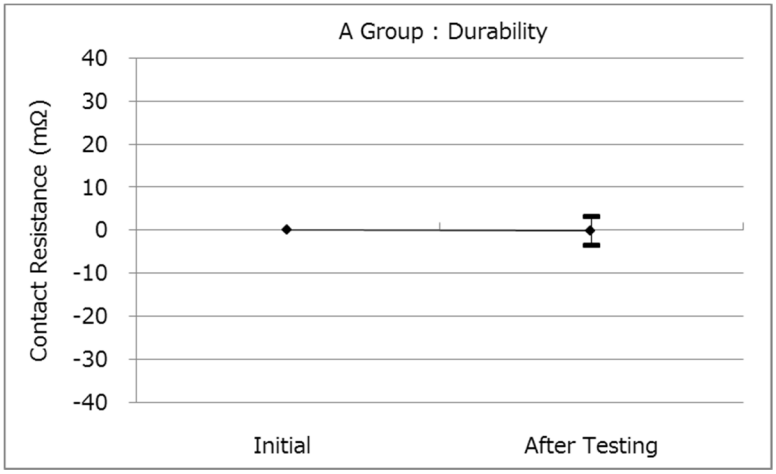
表 2-3. 試験結果(Table.2-3 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	n	データ／Data AVE.	MAX.	MIN.	s	X±3s	判定 Judge
G Group 湿度 (定常状態) Humidity (Steady State)	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#36 275mΩMAX	5	150	214.664	219.08	211.14	1.672	219.680	OK
		試験後 After Testing	AWG#36 ΔR=40mΩ MAX.			0.741	4.30	-3.19	1.422	5.007	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	9.840	10.40	9.36	0.434	11.142	OK
		試験後 After Testing	ΔR=40mΩ MAX.			-0.020	0.37	-0.52	0.406	1.198	OK
	絶縁抵抗 Insulation Resistance (MΩ)	初期 Initial	1000MΩMIN.	5	75	1.96×10^{4}MΩMIN.					OK
		試験後 After Testing	500MΩMIN.			8.47×10^{3}MΩMIN.					OK
	耐電圧 D. W. Voltage	初期 Initial	異常無き事 Abnormality shall not occur.	5	75	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#36 275mΩMAX.	5	150	215.987	220.29	211.64	1.506	220.505	OK
		耐久性後 After Durability	AWG#36 ΔR=40mΩ MAX.			-0.368	5.00	-5.60	1.983	5.581	OK
		試験後 After Testing	AWG#36 ΔR=40mΩ MAX.			-0.493	3.51	-4.15	1.356	3.575	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	9.316	9.94	9.05	0.355	10.381	OK
		耐久性後 After Durability	ΔR=40mΩ MAX.			-0.036	0.31	-0.88	0.480	1.404	OK
		試験後 After Testing	ΔR=40mΩ MAX.			0.120	0.31	-0.35	0.272	0.936	OK
	絶縁抵抗 Insulation Resistance (MΩ)	初期 Initial	1000MΩMIN.	5	75	2.74×10^{3}MΩMIN.					OK
		試験後 After Testing	500MΩMIN.			1.09×10^{4}MΩMIN.					OK
	耐電圧 D. W. Voltage	初期 Initial	異常無き事 Abnormality shall not occur.	5	75	異常無し No Abnormality					OK
		試験後 After Testing				異常無し No Abnormality					OK

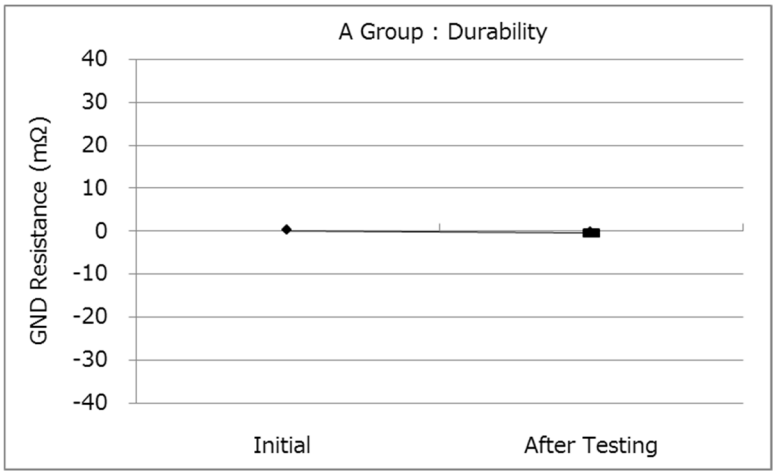
表 2-4. 試験結果(Table.2-4 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	n	データ／Data AVE.	MAX.	MIN.	s	X±3s	判定 Judge
J Group 塩水噴霧 Salt Water Spray	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#36 275mΩMAX.	5	150	214.888	218.70	211.12	1.445	219.223	OK
		試験後 After Testing	AWG#36 ΔR=40mΩ MAX.			0.194	3.14	-3.15	1.320	4.154	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	9.506	9.87	9.20	0.285	10.361	OK
		試験後 After Testing	ΔR=40mΩ MAX.			0.700	1.22	0.21	0.411	1.933	OK
K Group 硫化水素 ガス H2S Gas	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#36 275mΩMAX.	5	150	214.470	218.19	211.61	1.467	218.871	OK
		試験後 After testing	AWG#36 ΔR=40mΩ MAX.			-0.021	2.34	-2.31	1.019	3.036	OK
	GND 抵抗 GND Resistance (mΩ)	初期 Initial	50mΩMAX.	5	5	9.556	9.78	9.22	0.225	10.231	OK
		試験後 After Testing	ΔR=40mΩ MAX.			-0.280	-0.06	-0.42	0.171	0.233	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 (30P)		ΔT=30℃ MAX.	5	5	ΔT=27.2℃MAX.					OK

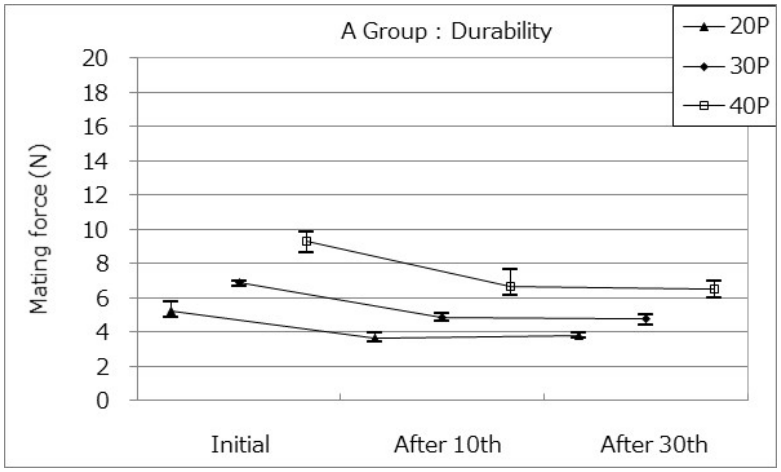
Graph.1



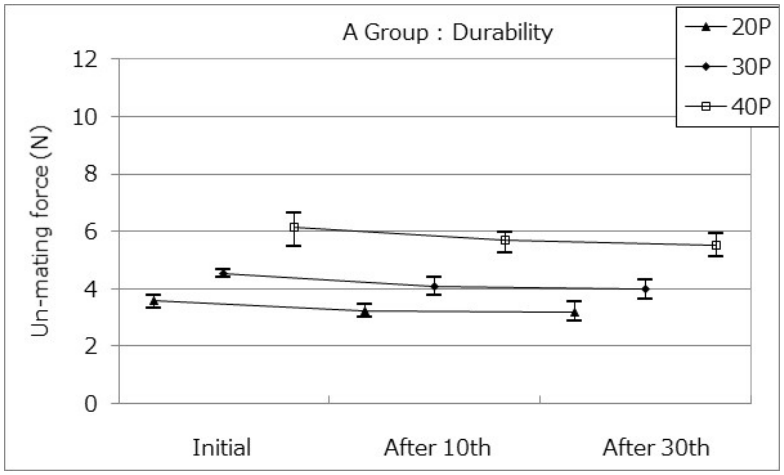
Graph.2



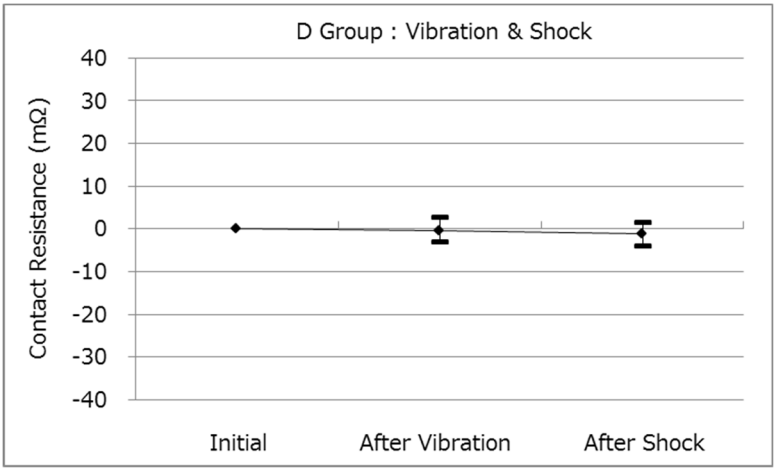
Graph.3



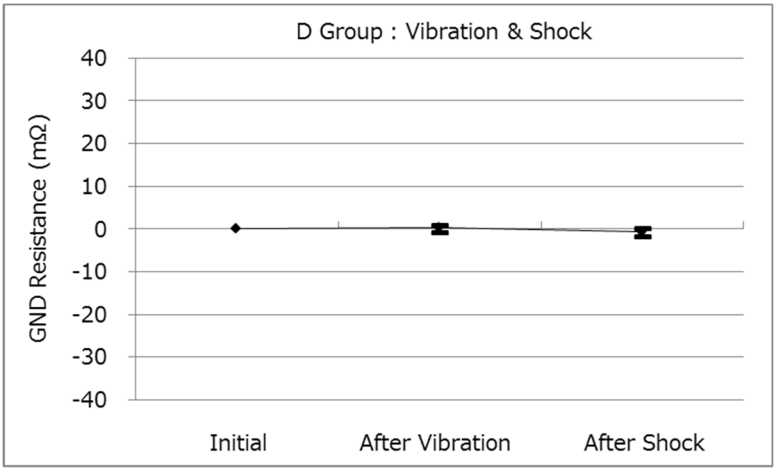
Graph.4



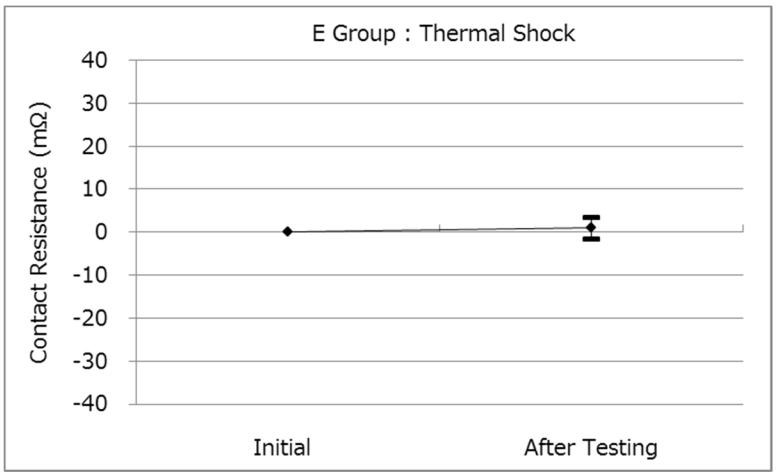
Graph.5



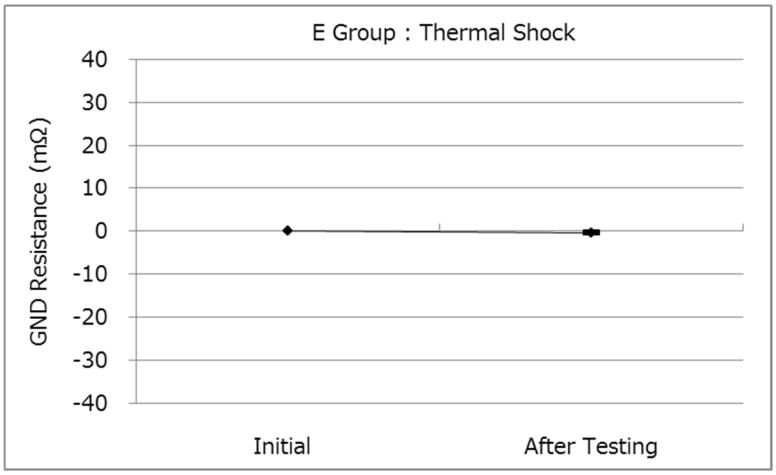
Graph.6



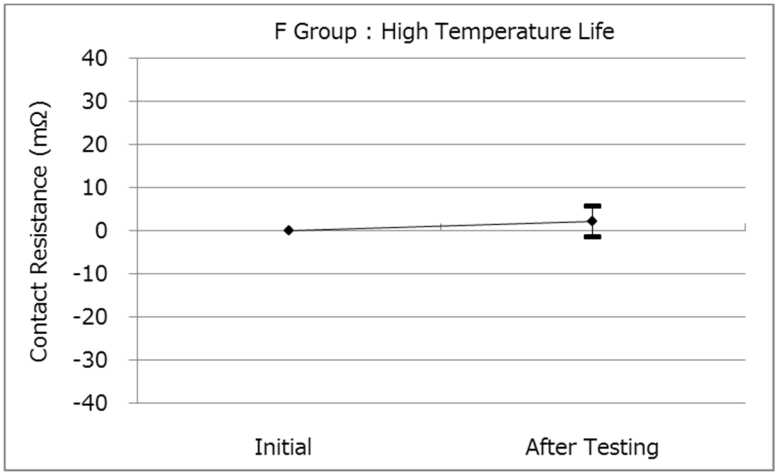
Graph.7



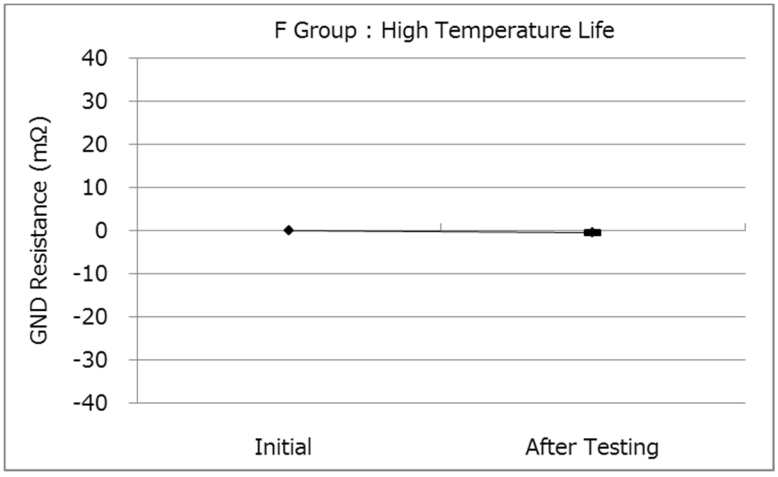
Graph.8



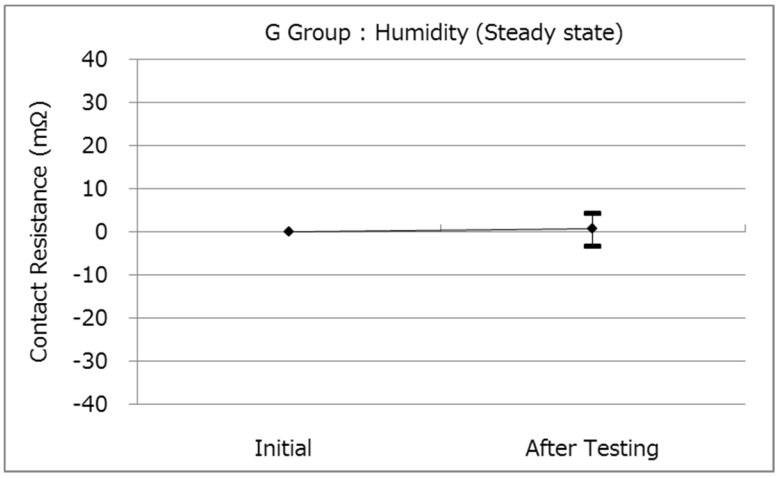
Graph.9



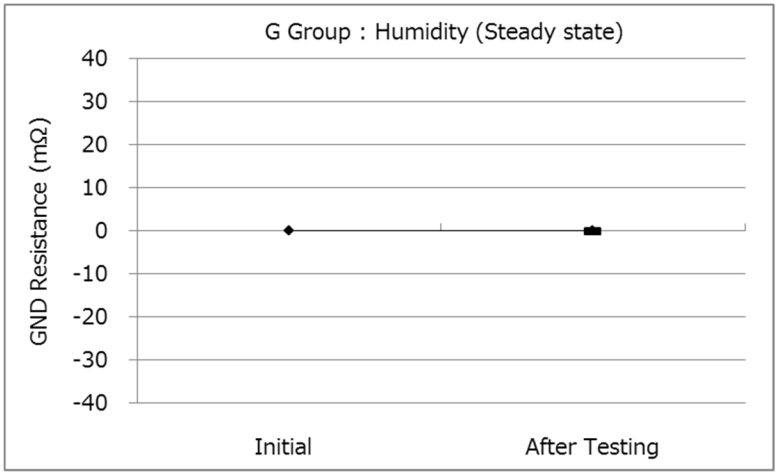
Graph.10



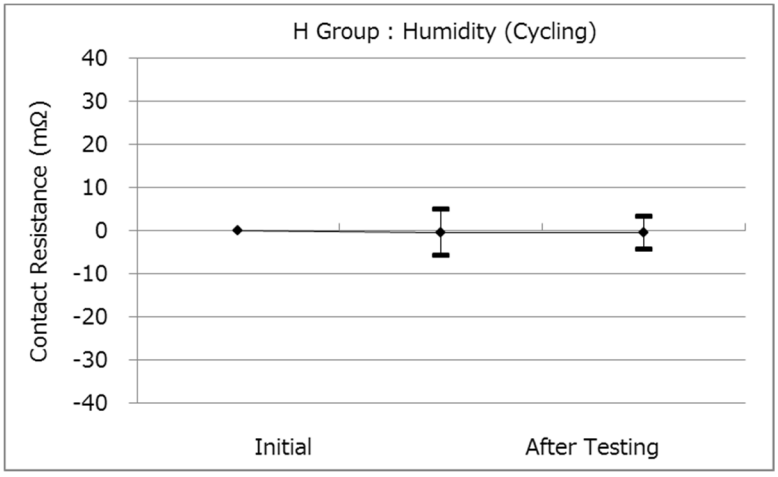
Graph.11



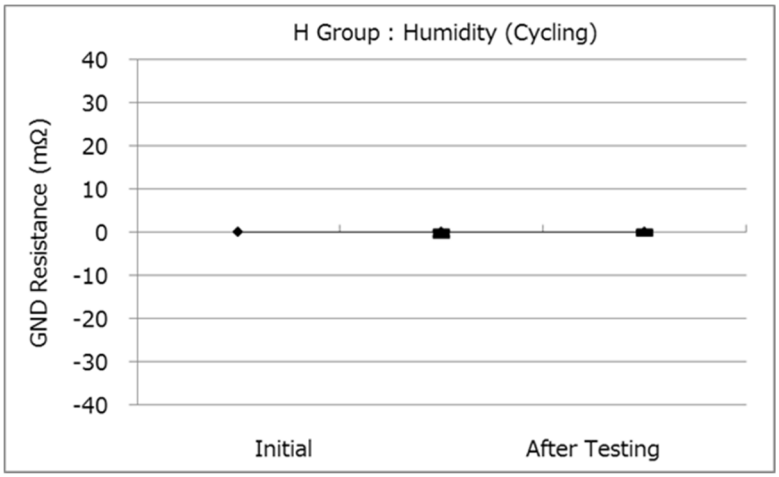
Graph.12



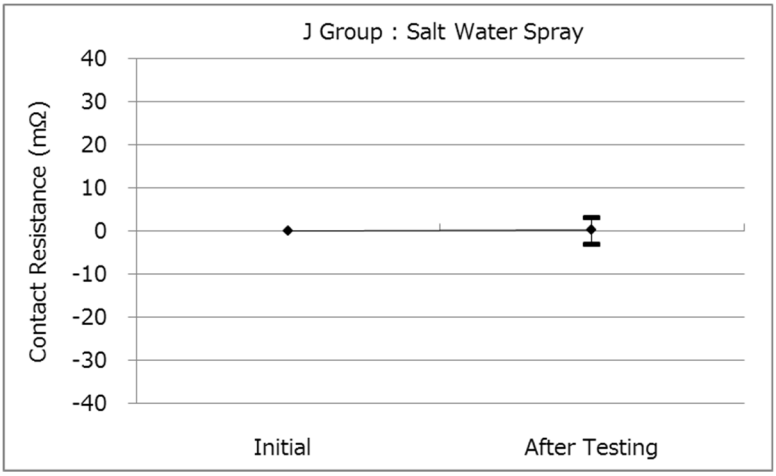
Graph.13



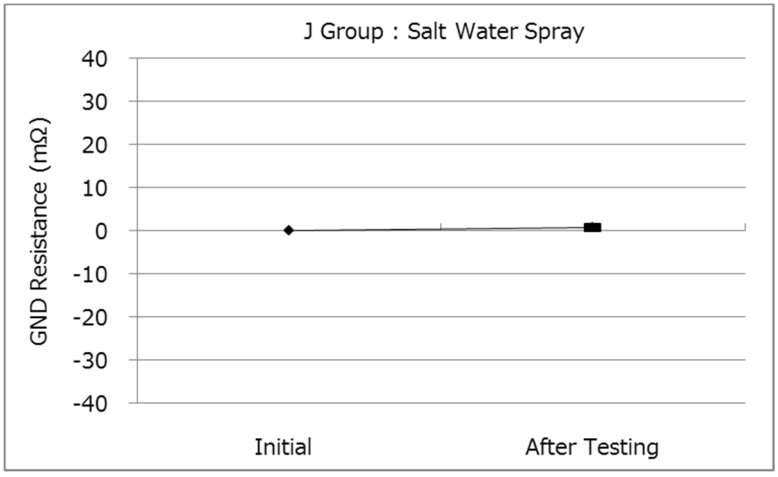
Graph.14



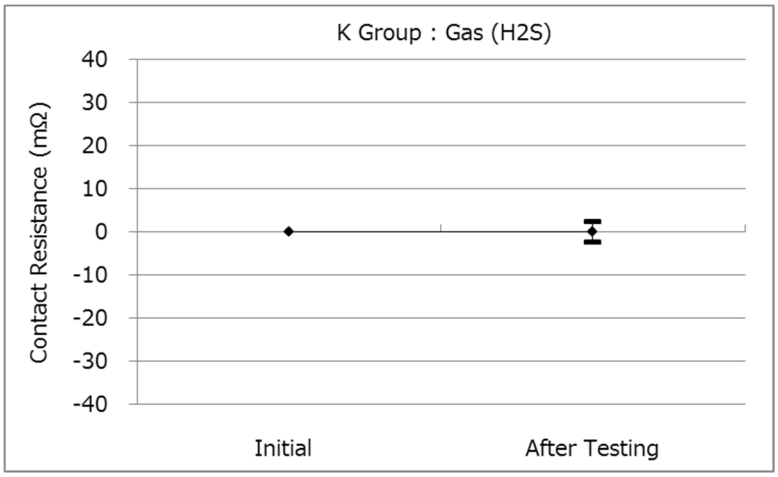
Graph.15



Graph.16



Graph.17



Graph.18