

CABLINE®-CA II PLUS Connector

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

Test Report

Product Specification no. PRS-2261

2	T22041	February 10, 2022	K.Hara	T.Tanigawa	H.Ikari
1	T22019	January 20, 2022	K.Hara	T.Tanigawa	H.Ikari
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Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. Purpose

To evaluate the performance of CABLINE-CAII PLUS Connector in accordance with PRS-2261.

2. 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. Test Sequence

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

4. Result

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. Conclusion

All the specimens met the requirements of PRS-2261.

Table1. Test Sequence and Sample Quantity

Test Item	Group												
	A	B	C	D	E	F	G	H	J	K	L	M	N
Contact Resistance	2,6			1,3,5	1,3	1,3	1,5	1,5,7	1,3	1,3			
Insulation Resistance							2,6	2,8					
D. W. Voltage							3,7	3,9					
Temperature Rising													1
Mating Force	1,5												
Unmating Force	3,7												
Durability	4							4 (10cycles)					
Contact Retention Force		1,3											
Conn. Lock			1										
Cable Retention Force	8												
Vibration				2									
Shock				4									
Thermal Shock					2								
High Temperature Life		2				2							
Humidity (SteadyState)							4						
Humidity (Cycling)								6					
Salt Water Spray									2				
H ₂ S Gas										2			
Solderability											1		
Soldering Heat Resistance												1	
Sample QTY.	5pcs	20pcs	5pcs	5pcs	5pcs	5pcs	5pcs	5pcs	5pcs	5pcs	10pcs	10pcs	5pcs

The number of group is test sequence.

Table2-1. Test result

Test Item	Contents of Measurement		Specifications	Set	n	Data					Judge	
						AVE.	MAX.	MIN.	s	X±3s		
A Group Durability Cable Retention Force	Contact Resistance (mΩ)	Initial	AWG#40 600mΩMAX.	5	300	498.735	504.97	492.44	2.138	505.149	OK	
		After Testing	AWG#40 ΔR=40mΩ MAX.			-1.144	4.28	-6.92	2.033	4.955	OK	
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	10.290	11.83	8.95	0.860	12.870	OK	
		After Testing	ΔR=40mΩ MAX.			-0.190	0.94	-1.33	0.519	1.367	OK	
	60P	Mating Force (N)	Initial	29.10N MAX.	5	5	13.466	13.82	13.05	0.301	14.369	OK
			After Testing	29.10N MAX.			9.218	10.00	8.52	0.693	11.297	OK
		Unmating Force (N)	Initial	6.0N MIN.	5	5	9.386	9.67	8.96	0.261	8.603	OK
			After Testing	6.0N MIN.			8.332	8.69	7.75	0.354	7.270	OK
Cable Retention Force		29.40N MIN.	5	5	197.766	201.64	194.86	2.548	190.122	OK		
B Group High Temperature Life	(PLUG) Contact Retention Force (N)	Initial	0.6N MIN.	—	20	It does not pull out, even if applies the power of 1.8N to a terminal.					OK	
		After Testing	0.6N MIN.	—	20	It does not pull out, even if applies the power of 1.8N to a terminal.					OK	
	(RECE) Contact Retention Force (N)	Initial	0.2N MIN.	—	20	1.532	1.59	1.39	0.048	1.388	OK	
		After Testing	0.2N MIN.	—	20	1.222	1.48	1.03	0.124	0.850	OK	
C Group Conn. Lock	Initial	The lock does not damage and cancel.	5	5	No Abnormality					OK		

Table2-2. Test result

Test Item	Contents of Measurement		Specifications	Set	n	Data					Judge
						AVE.	MAX.	MIN.	s	X±3s	
D Group Vibration ↓ Shock	Contact Resistance (mΩ)	Initial	AWG#40 600mΩMAX.	5	300	497.357	507.23	486.76	4.320	510.317	OK
		After Vibration	AWG#40 ΔR=40mΩ MAX.			0.265	5.21	-4.10	2.245	7.000	OK
		After Shock	AWG#40 ΔR=40mΩ MAX.			-0.098	5.52	-3.33	2.224	6.574	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	10.730	12.03	9.25	0.840	13.250	OK
		After Vibration	ΔR=40mΩ MAX.			-0.062	1.27	-1.42	0.918	2.692	OK
		After Shock	ΔR=40mΩ MAX.			0.095	1.22	-1.49	0.820	2.555	OK
	Electrical discontinuity	During Vibration	1μsec. MAX.	5	5	No Electrical discontinuity					OK
		During Shock				No Electrical discontinuity					OK
	Appearance	After Vibration	No Abnormality adversely affecting the performance shall occur.	5	5	No Abnormality					OK
		After Shock				No Abnormality					OK
E Group Thermal Shock	Contact Resistance (mΩ)	Initial	AWG#40 600mΩMAX.	5	300	498.024	508.48	488.14	3.936	509.832	OK
		After Testing	AWG#40 ΔR=40mΩ MAX.			0.647	5.84	-3.86	1.971	6.560	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	9.664	10.49	9.27	0.462	11.050	OK
		After Testing	ΔR=40mΩ MAX.			0.708	1.51	-0.13	0.456	2.076	OK
F Group High Temperature Life	Contact Resistance (mΩ)	Initial	AWG#40 600mΩMAX.	5	300	497.634	509.31	486.00	4.140	510.054	OK
		After Testing	AWG#40 ΔR=40mΩ MAX.			0.189	5.38	-4.76	2.084	6.441	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	9.649	9.94	9.40	0.201	10.252	OK
		After Testing	ΔR=40mΩ MAX.			0.579	1.34	-0.11	0.450	1.929	OK

Table2-3. Test result

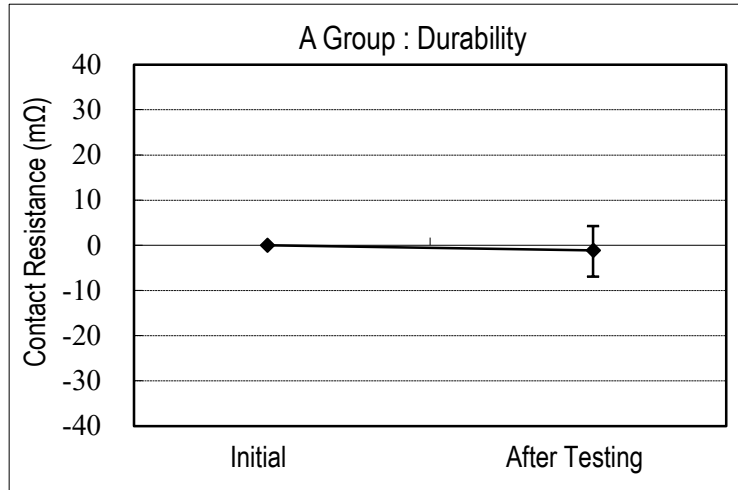
Test Item	Contents of Measurement		Specifications	Set	n	Data					Judge
						AVE.	MAX.	MIN.	s	X±3s	
G Group Humidity (Steady State)	Contact Resistance (mΩ)	Initial	AWG#40 600mΩMAX	5	300	495.934	504.45	485.36	4.436	509.242	OK
		After Testing	ΔR=40mΩ MAX.			0.663	4.13	-3.47	1.552	5.319	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	10.469	11.79	9.52	0.724	12.641	OK
		After Testing	ΔR=40mΩ MAX.			0.765	2.03	-0.85	0.925	3.540	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	150	8.7×10 ⁴ MΩMIN.					OK
		After Testing	500MΩMIN.			3.0×10 ³ MΩMIN.					OK
	D. W. Voltage	Initial	No creeping discharge, flashover, or insulator breakdown shall occur.	5	150	No Abnormality					OK
		After Testing				No Abnormality					OK
H Group Humidity (Cycling)	Contact Resistance (mΩ)	Initial	AWG#40 600mΩMAX.	5	300	499.591	507.97	489.78	3.977	511.522	OK
		After Durability	ΔR=40mΩ MAX.			-0.465	3.64	-3.68	1.626	4.413	OK
		After Testing	ΔR=40mΩ MAX.			0.311	5.29	-4.91	2.255	7.076	OK
	GND Resistance (mΩ)	初期	50mΩMAX.	5	5	10.322	10.95	9.88	0.325	11.297	OK
		After Durability	ΔR=40mΩ MAX.			0.900	1.90	-0.48	0.661	2.883	OK
		After Testing	ΔR=40mΩ MAX.			0.032	0.80	-0.69	0.452	1.388	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	150	1.1×10 ⁵ MΩMIN.					OK
		After Testing	500MΩMIN.			1.0×10 ³ MΩMIN.					OK
	D. W. Voltage	Initial	No creeping discharge, flashover, or insulator breakdown shall occur.	5	150	No Abnormality					OK
		After Testing				No Abnormality					OK

Table2-4. Test result

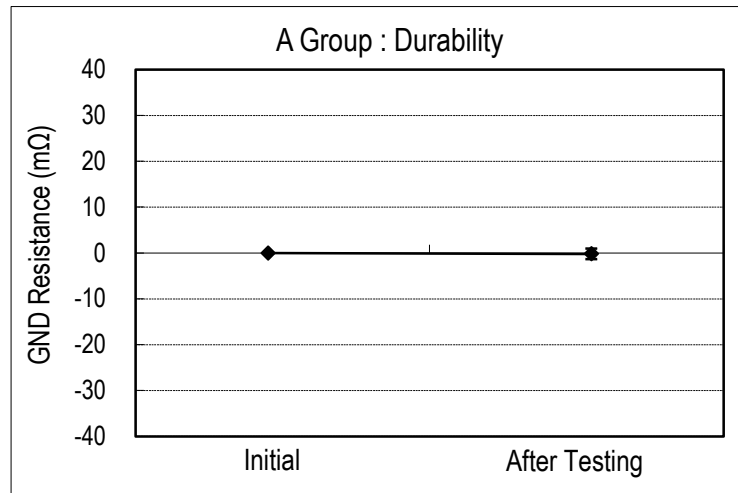
Test Item	Contents of Measurement		Specifications	Set	n	Data					Judge
						AVE.	MAX.	MIN.	s	X±3s	
J Group Salt Water Spray	Contact Resistance (mΩ)	Initial	AWG#40 600mΩMAX.	5	300	494.309	506.65	479.22	5.381	510.452	OK
		After Testing	AWG#40 ΔR=40mΩ			0.772	4.52	-3.03	1.850	6.322	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	11.049	11.93	10.50	0.453	12.408	OK
		After Testing	ΔR=40mΩ MAX.			-0.055	1.09	-1.27	0.772	2.261	OK
K Group H2S Gas	Contact Resistance (mΩ)	Initial	AWG#40 600mΩMAX.	5	300	499.343	506.97	490.08	4.134	511.745	OK
		After testing	AWG#40 ΔR=40mΩ MAX.			1.226	3.72	-1.60	1.158	4.700	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	10.916	12.74	9.26	0.968	13.820	OK
		After Testing	ΔR=40mΩ MAX.			0.447	2.13	-1.14	0.938	3.261	OK
L Group Solderability	Appearance		More than 95% of the dipped surface shall be evenly wet.	10	10	Wet 95% MIN.					OK
M Group Soldering Heat Resistance	Appearance		No deformation nor defect adversely affecting the performance occur.	10	10	No Abnormality					OK
N Group Temperature Rising	AWG#40 0.3A/Contact		ΔT=30°C MAX.	5	5	ΔT=28.3°C MAX.					OK

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.)

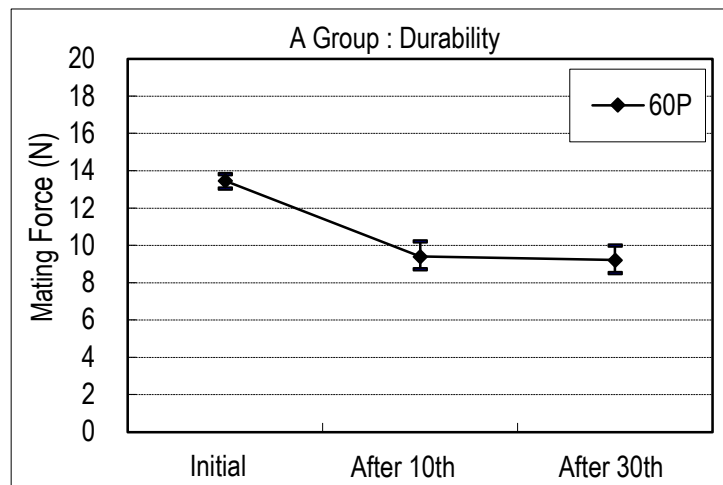
Graph.1



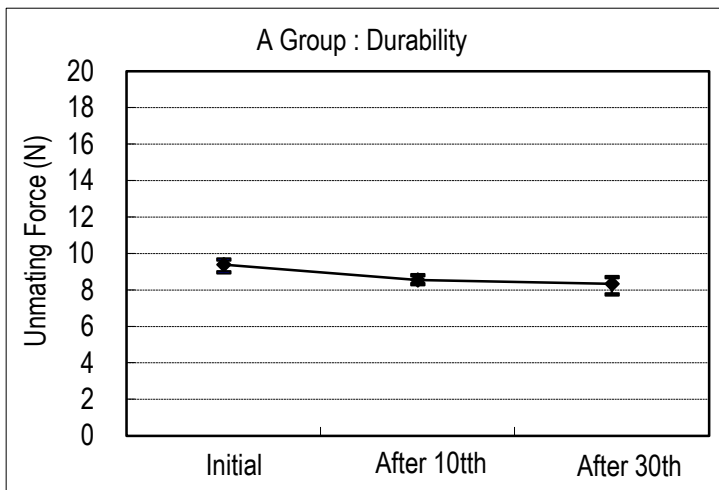
Graph.2



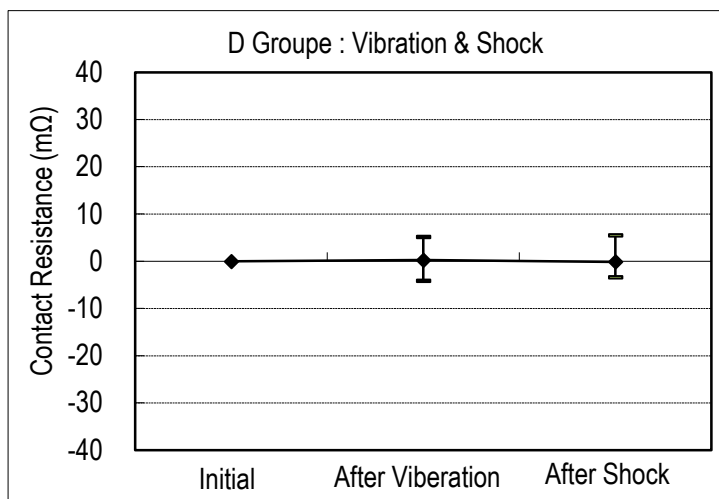
Graph.3



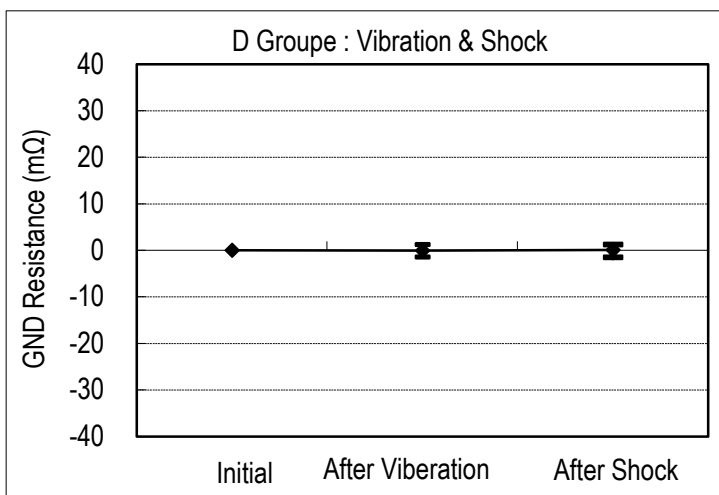
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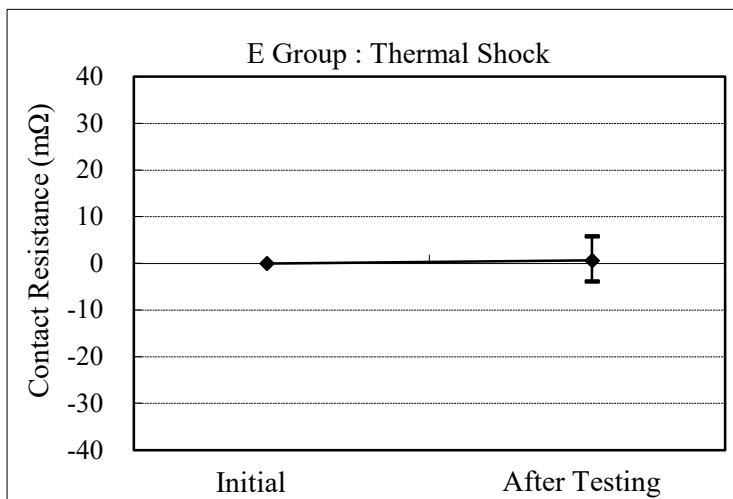
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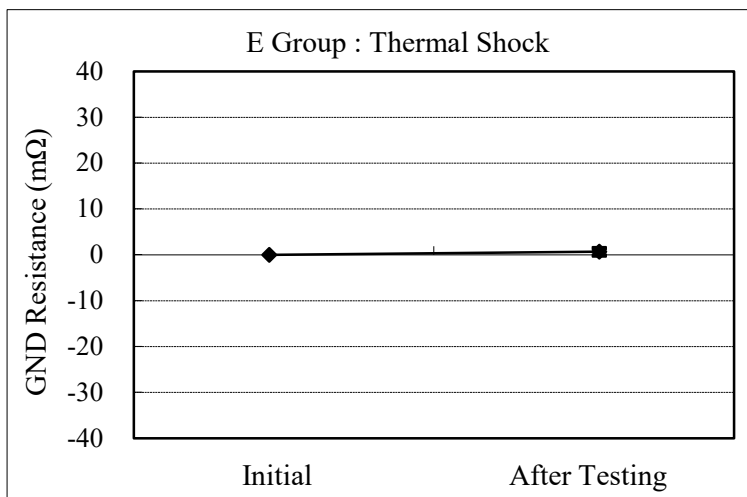
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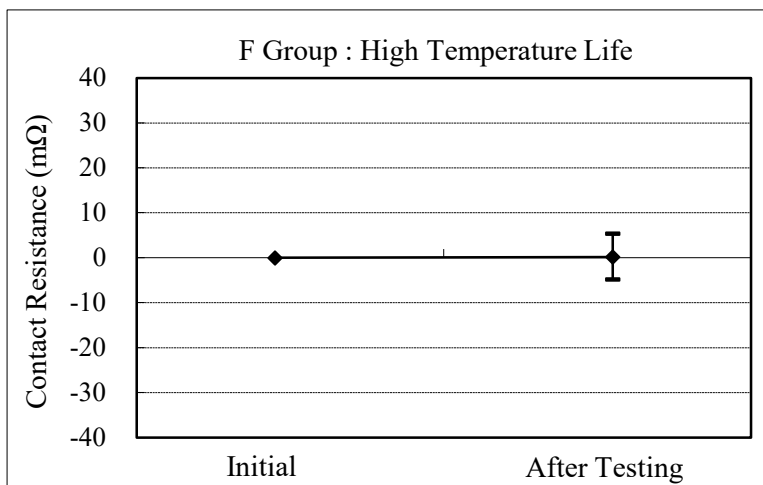
Graph.7



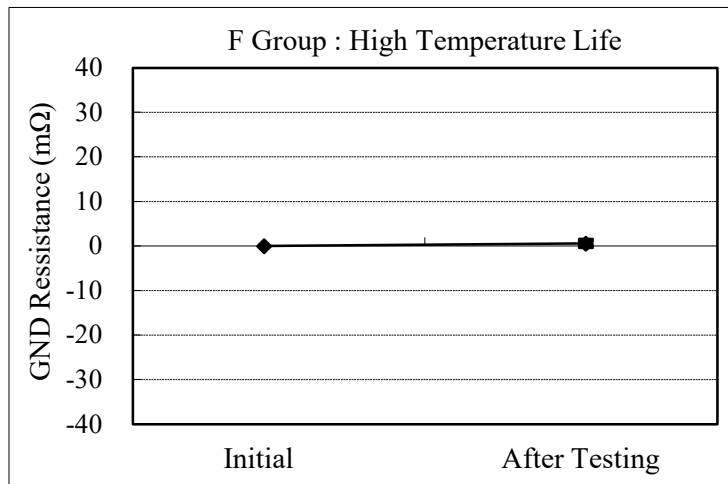
Graph.8



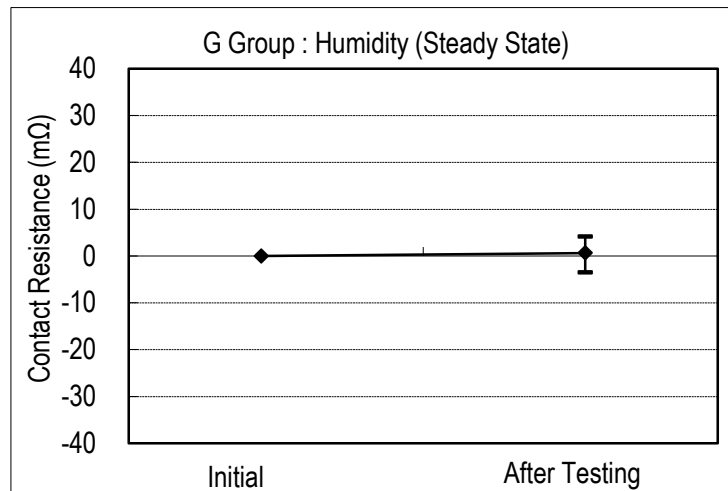
Graph.9



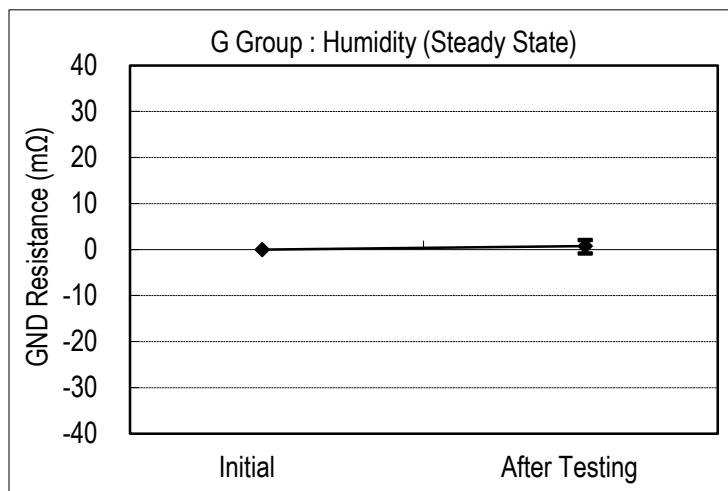
Graph.10



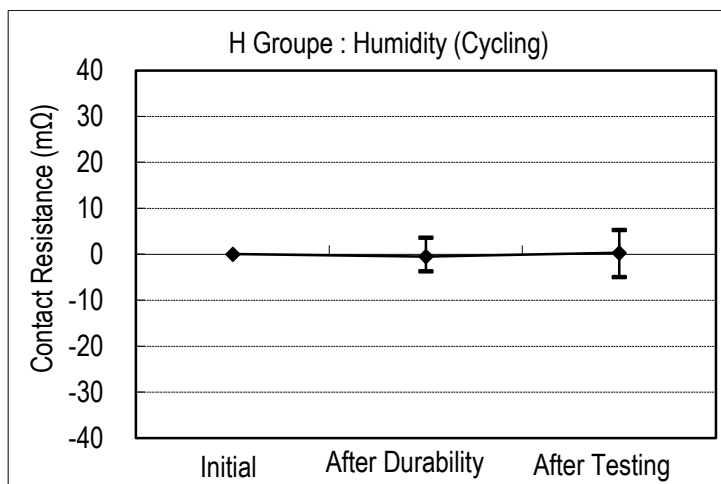
Graph.11



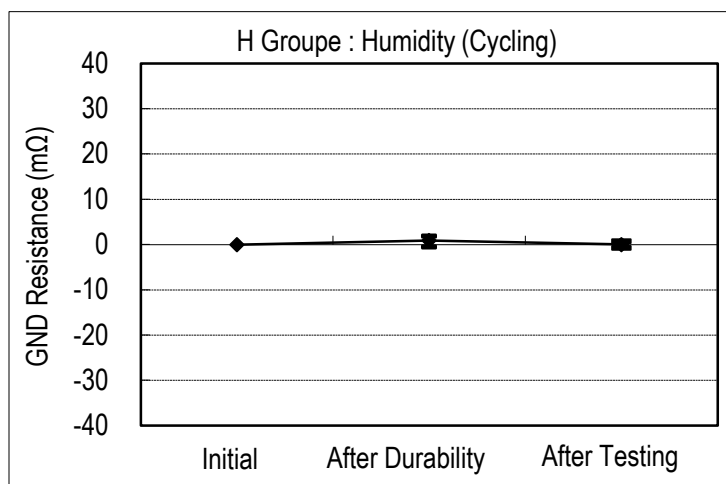
Graph.12



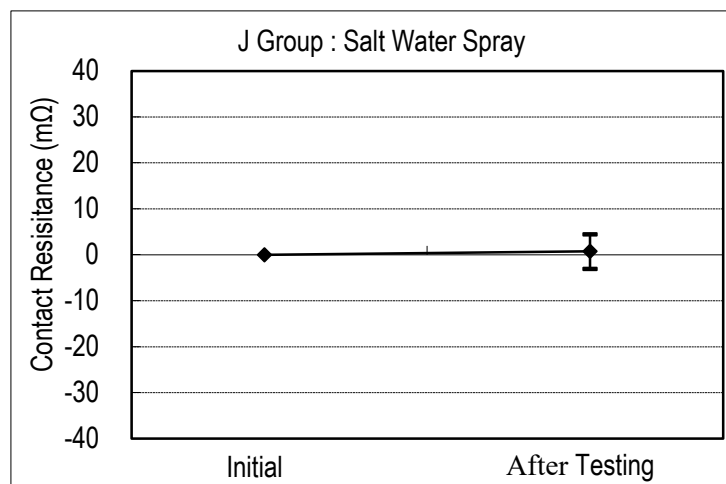
Graph.13



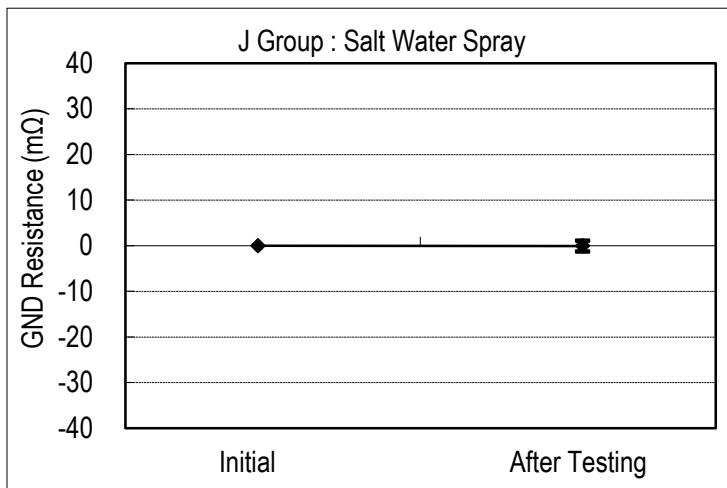
Graph.14



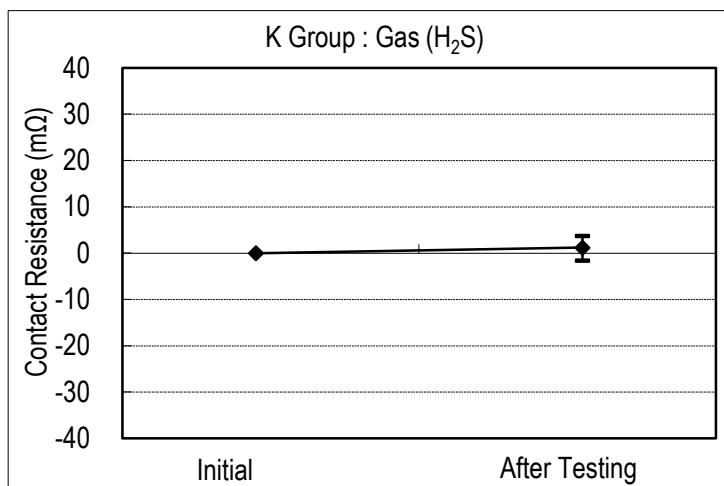
Graph.15



Graph.16



Graph.17



Graph.18

