CABLINE®-UMF

Part No. Plug: 21102-0**E-2#, Receptacle: 20879-0**E-02

Test Report

Product Specification No. PRS-2997

0	T26010	March 2, 2026	H.Uchida	M.Nakamura	H.Ikari
Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. Purpose

To evaluate the performance of CABLINE-UMF Connector in accordance with PRS-2997.

2. Specimen

(1) CABLINE-UMF PLUG FPC ASSEMBLY （Part No. 21102-0**E-2#）
(2) CABLINE-UMF RECEPTACLE ASSEMBLY （Part No. 20879-0**E-02）

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-2997.
The “n” in the tables show the number of measurement points.

5. Conclusion

All the specimens met the requirements of PRS-2997.

Table 1 Test Sequence and Sample Quantity

No.		Test Item	Testing Groups											
			A	B	C	D	E	F	G	H	I	J	K	L
4.1 Electrical Performance	1	Contact resistance	2,6		1,3,5	1,3	1,3	1,5	1,5,7	1,3	1,3			
	2	Insulation resistance						2,6	2,8					
	3	Dielectric withstanding voltage						3,7	3,9					
	4	Temperature rising												1
4.2 Mechanical Performance	1	Mating force	1,5											
		Unmating force	3,7											
	2	Durability	4						4 (10cycles					
	3	Conn. Lock		1										
	4	Vibration			2									
	5	Shock			4									
4.3 Environmental Performance	1	Thermal shock				2								
	2	High temperature life					2							
	3	Humidity (Steady State)						4						
	4	Humidity (Cycling)							6					
	5	Saltwater spray								2				
	6	H_2S gas									2			
4.4 Others	1	Solder ability										1		
	2	Soldering heat resistance											1	
Specimen quantity			5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	10 pcs.	10 pcs.	5 pcs.

※Numbers indicate test sequences.

Table.2-1 Test Result

Test Item	Contents of Measurement			Specifications	Set	n	Data AVE.	Data MAX.	Data MIN.	Data s	Data X±3s	Judge.
A Group Durability Cable Retention Force	Contact Resistance (mΩ)		Initial	60mΩMAX.	5	350	19.841	23.42	16.23	1.264	23.633	Pass
			After 30cycles	ΔR=40mΩ MAX.			-2.280	3.01	-7.00	1.787	3.081	Pass
	GND Resistance (mΩ)		Initial	50mΩMAX.	5	5	4.280	4.37	4.17	0.074	4.502	Pass
			After 30cycles	ΔR=40mΩ MAX.			0.078	0.50	-0.31	0.376	1.206	Pass
	40P	Mating Force (N)	Initial	40.0N MAX.	5	5	15.010	15.39	14.33	0.414	16.252	Pass
			After 30cycles	40.0N MAX.			12.926	13.74	12.40	0.556	14.594	Pass
		Unmating Force (N)	Initial	4.00N MIN.	5	5	11.868	11.99	11.69	0.112	11.532	Pass
			After 30cycles	4.00N MIN.			12.122	13.06	11.75	0.555	10.457	Pass
	70P	Mating Force (N)	Initial	58.00N MAX.	5	5	24.790	25.89	21.94	1.684	29.842	Pass
			After 30cycles	58.00N MAX.			21.476	23.62	19.91	1.752	26.732	Pass
		Unmating Force (N)	Initial	7.00N MIN.	5	5	16.484	17.35	15.88	0.540	14.864	Pass
			After 30cycles	7.00N MIN.			16.468	17.15	15.16	0.827	13.987	Pass
B Group Connector Lock			Initial	The lock does not damage and cancel.	5	5	No Abnormality					Pass
C Group Vibration ↓ Shock	Contact Resistance (mΩ)		Initial	60mΩMAX.	5	350	19.570	23.87	15.24	1.460	23.950	Pass
			After Vibration	ΔR=40mΩ MAX.			0.044	0.47	-0.39	0.146	0.482	Pass
			After Shock	ΔR=40mΩ MAX.			0.053	0.48	-0.38	0.146	0.491	Pass
	GND Resistance (mΩ)		Initial	50mΩMAX.	5	5	4.370	4.56	4.10	0.173	4.889	Pass
			After Vibration	ΔR=40mΩ MAX.			-0.056	0.17	-0.29	0.169	0.451	Pass
			After Shock	ΔR=40mΩ MAX.			0.010	0.15	-0.24	0.147	0.451	Pass
	Electrical discontinuity		During Vibration	1μsec. MAX.	5	175	No electrical discontinuity					Pass
			During Shock				No electrical discontinuity					Pass
	Appearance		After Vibration	No abnormality adversely affecting the performance shall occur.	5	175	No abnormality					Pass
			After Shock				No abnormality					Pass

Table.2-2 Test Result

Test Item	Contents of Measurement		Specifications	Set	n	Data					Judge.
						AVE.	MAX.	MIN.	s	X±3s	
D Group Thermal Shock	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	350	19.524	23.89	15.15	1.464	23.916	Pass
		After Testing	ΔR=40mΩ MAX.			-0.943	4.59	-6.53	1.888	4.721	Pass
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	4.238	4.33	4.08	0.103	4.547	Pass
		After Testing	ΔR=40mΩ MAX.			-0.006	0.47	-0.30	0.298	0.888	Pass
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur	5	5	No abnormality					Pass
E Group High Temperature Life	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	350	19.350	24.62	14.31	1.763	24.639	Pass
		After Testing	ΔR=40mΩ MAX.			-0.751	0.63	-2.45	0.571	0.962	Pass
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	4.272	4.79	4.02	0.317	5.223	Pass
		After Testing	ΔR=40mΩ MAX.			-0.066	0.51	-0.43	0.381	1.077	Pass
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur			No abnormality					Pass
F Group Humidity (Steady State)	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	350	19.949	25.31	16.08	1.790	25.319	Pass
		After Testing	ΔR=40mΩ MAX.			-1.104	1.12	-3.34	0.768	1.200	Pass
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	4.428	5.20	4.18	0.435	5.733	Pass
		After Testing	ΔR=40mΩ MAX.			0.016	0.35	-0.28	0.305	0.931	Pass
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	5	1.4×10^5 MΩ					Pass
		After Testing	500MΩMIN.			5.3×10^4 MΩ					Pass
	D. W. Voltage	Initial	No creeping discharge, flashover, or insulator breakdown shall occur.	5	5	No abnormality					Pass
		After Testing				No abnormality					Pass
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur	5	5	No abnormality					Pass
G Group Humidity (Cycling)	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	350	19.348	22.59	16.12	1.100	22.648	Pass
		After 10cycles	ΔR=40mΩ MAX.			-0.006	5.32	-4.39	1.833	5.493	Pass
		After Testing	ΔR=40mΩ MAX.			-1.058	2.63	-4.66	1.289	2.809	Pass
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	4.444	4.71	3.94	0.322	5.410	Pass
		After 10cycles	ΔR=40mΩ MAX.			0.274	0.74	0.02	0.291	1.147	Pass
		After Testing	ΔR=40mΩ MAX.			0.496	0.91	0.28	0.251	1.249	Pass
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	175	2.2×10^5 MΩ					Pass
		After Testing	500MΩMIN.			2.5×10^4 MΩ					Pass
	D. W. Voltage	Initial	No creeping discharge, flashover, or insulator breakdown shall occur.	5	175	No abnormality					Pass
		After Testing				No abnormality					Pass
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur	5	5	No abnormality					Pass

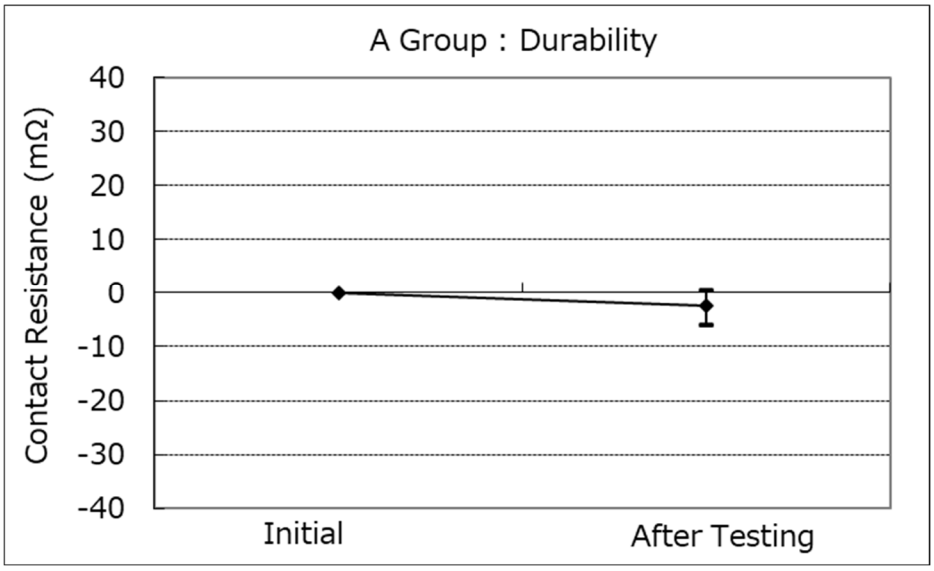
Table.2-3 Test Result

Test Item	Contents of Measurement		Specifications	Set	n	Data					Judge.
						AVE.	MAX.	MIN.	s	X±3s	
H Group Saltwater Spray	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	350	18.581	22.49	14.68	1.309	22.508	Pass
		After Testing	ΔR=40mΩ MAX.			-0.742	2.41	-3.89	1.054	2.420	Pass
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	5.700	5.86	5.48	0.158	6.174	Pass
		After Testing	ΔR=40mΩ MAX.			-0.248	-0.02	-0.54	0.228	0.436	Pass
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur	5	5	No abnormality					Pass
I Group H_2S Gas	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	350	19.381	23.22	17.15	1.295	23.266	Pass
		After Testing	ΔR=40mΩ MAX.			-0.306	1.65	-2.27	0.659	1.671	Pass
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	4.394	4.60	4.23	0.135	4.799	Pass
		After Testing	ΔR=40mΩ MAX.			-0.124	0.20	-0.34	0.231	0.569	Pass
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur	5	5	No abnormality					Pass
J Group Solderability	Appearance		More than 95% of the dipped surface shall be evenly wet.	10	10	Wet 95% MIN.					Pass
K Group Soldering Heat Resistance	Appearance		No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					Pass
L Group Temperature Rising	0.3A DC (per contact pin) / Up to 70 contacts *1		ΔT=30℃ MAX.	5	5	ΔT=20.0℃MAX.					Pass
	0.5A DC (per contact pin) / Up to 31 contacts *2			5	5	ΔT=27.4℃MAX.					Pass

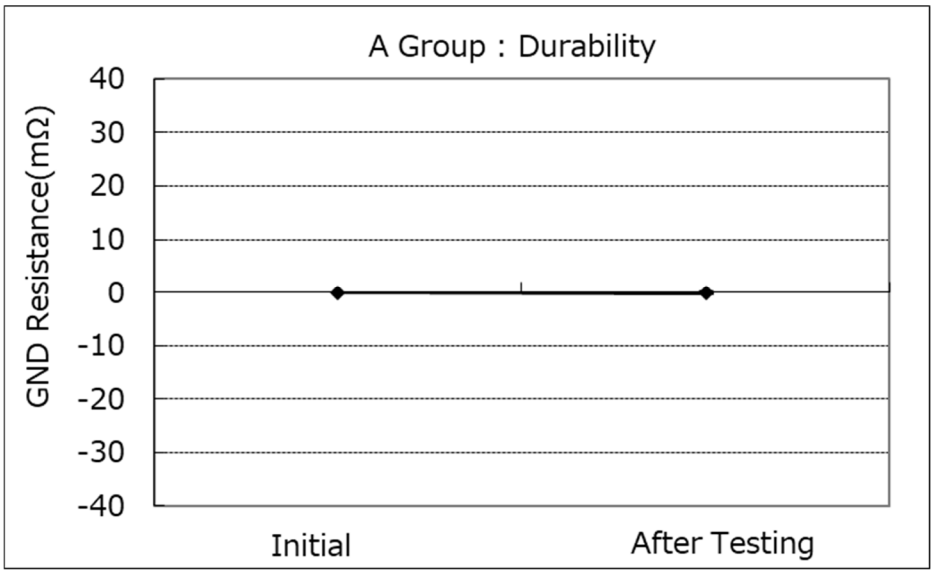
*1 Temperature Rising test is a result when applied ratings current (0.3A/contact) whole contacts of 70pin connector (0.3A×70pin= 21.0A).

*2 Temperature Rising test is a result when applied ratings current (0.5A/contact) each adjacent 31pin contacts of 70pin connector (0.5A×31pin= 15.5A).

Graph.1



Graph.2



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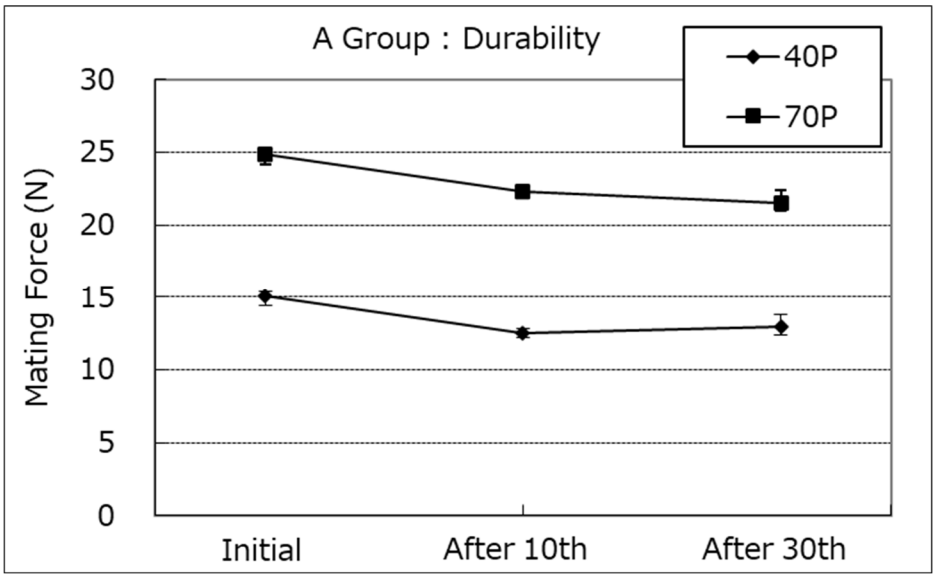

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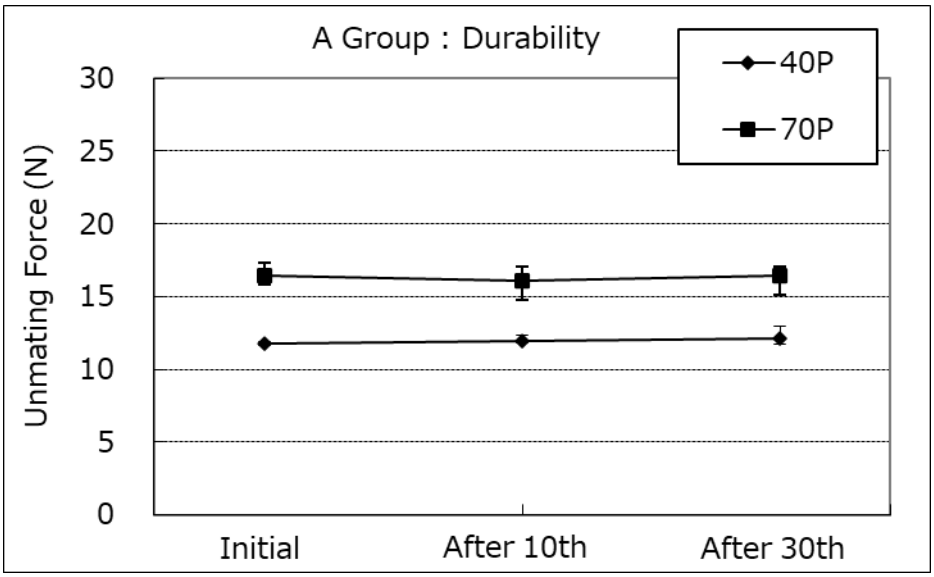

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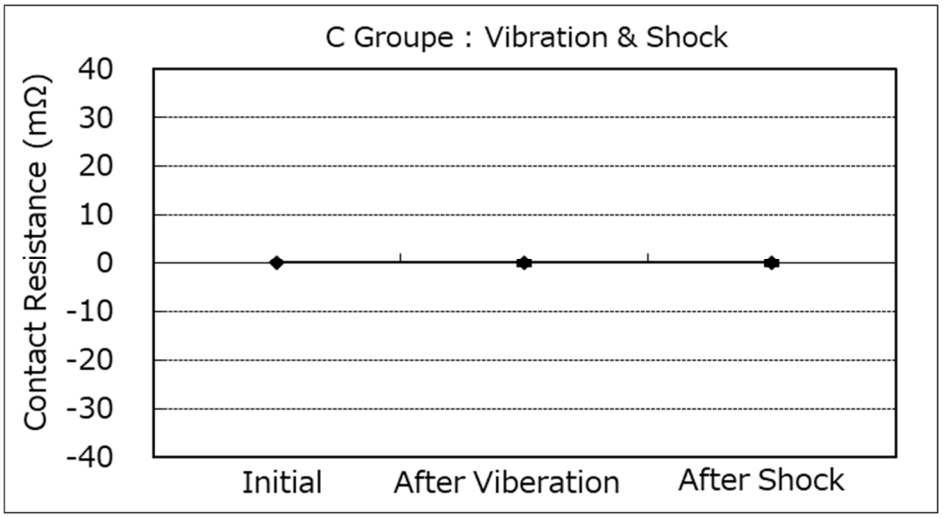

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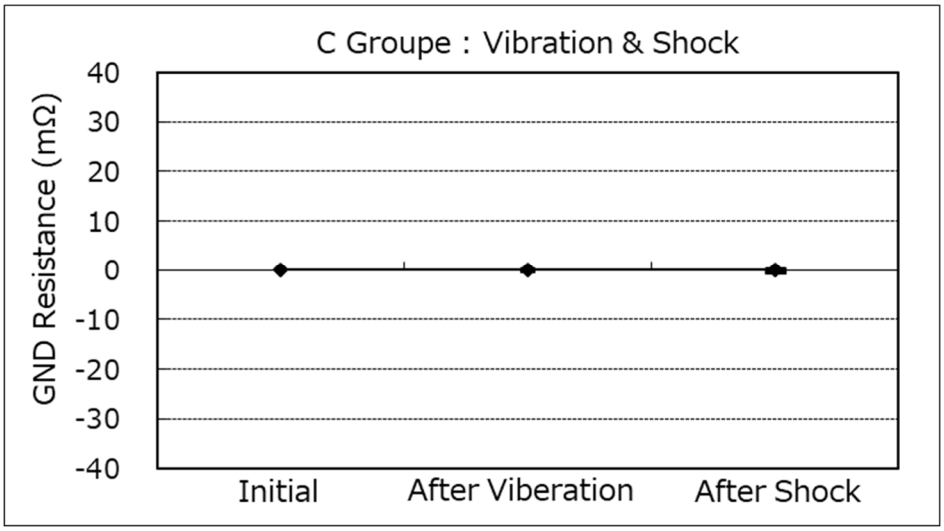

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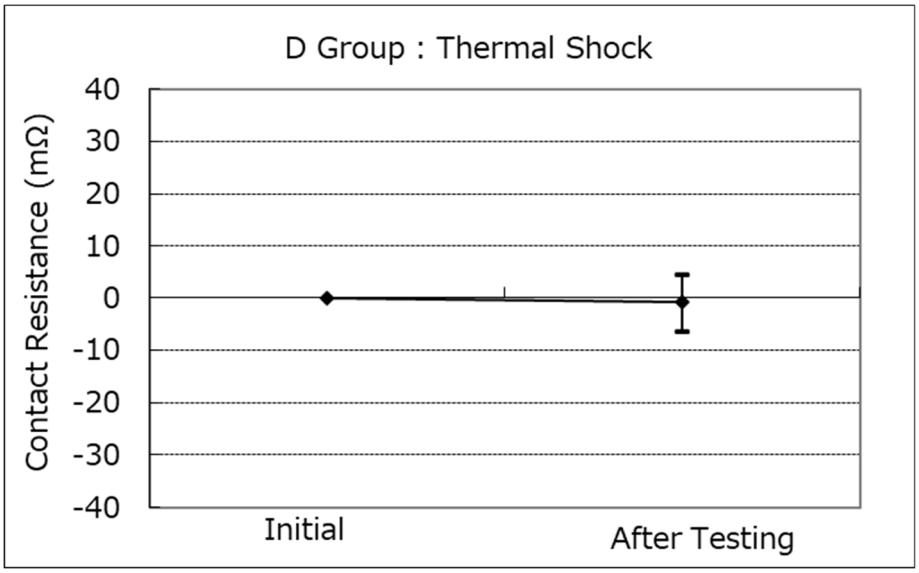

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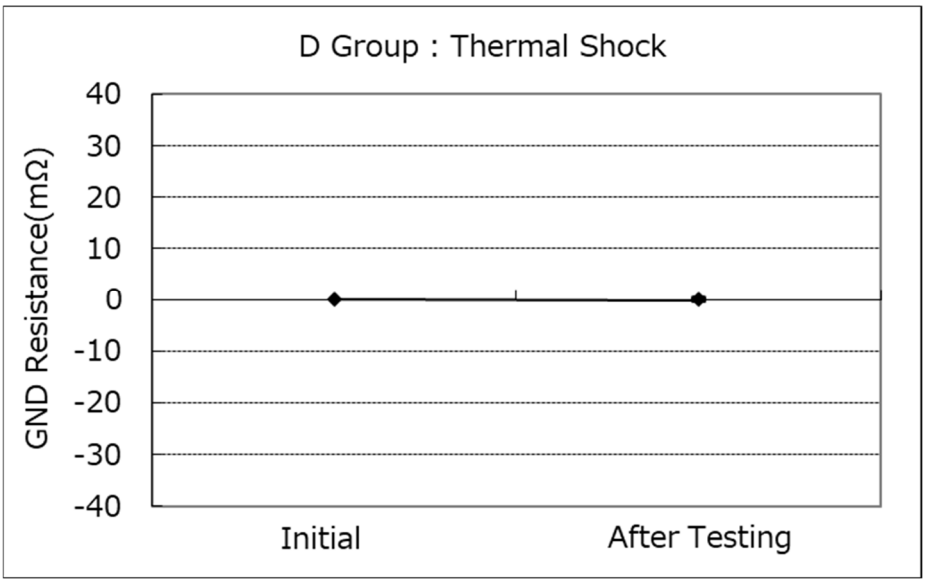

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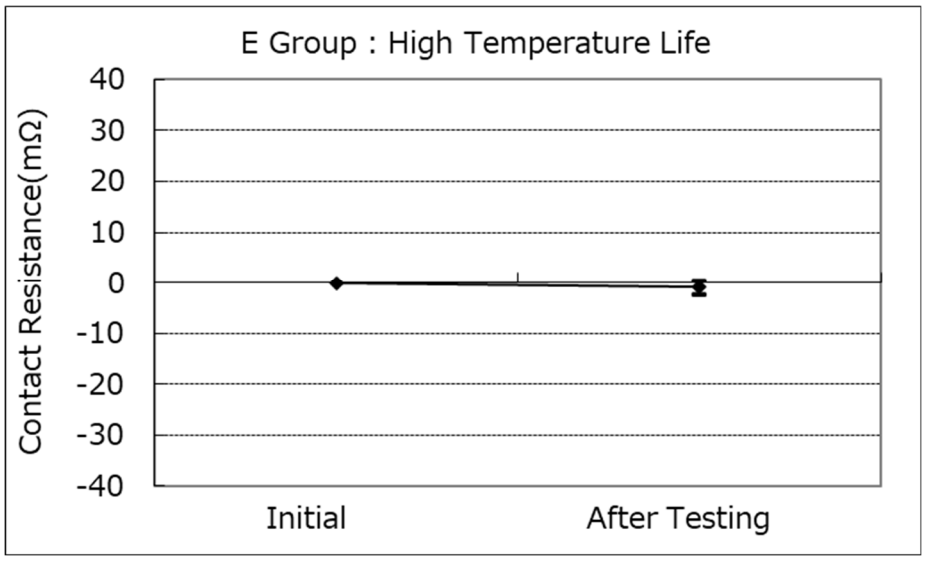

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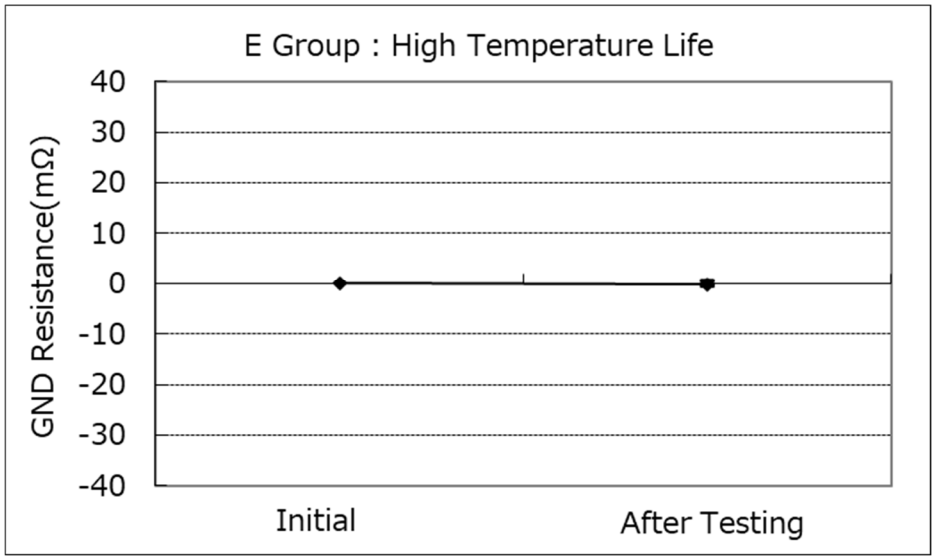

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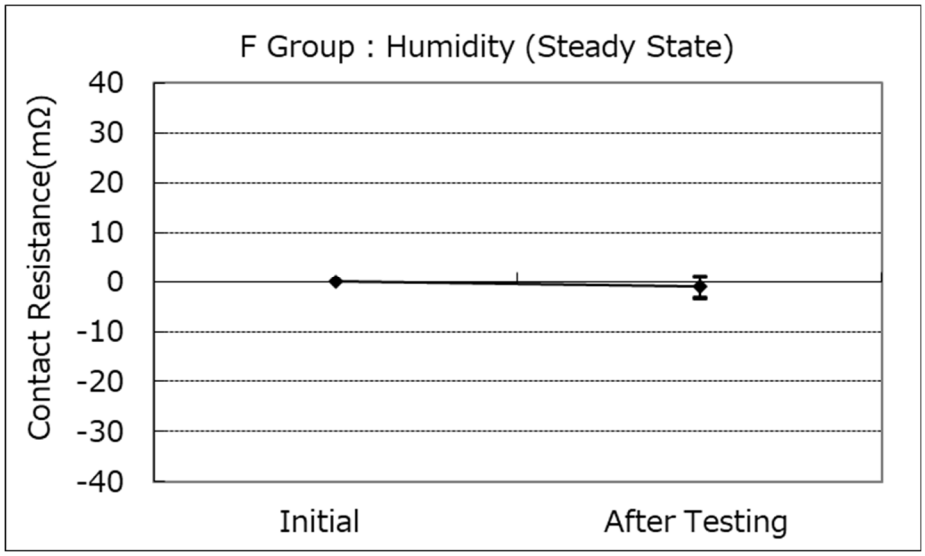

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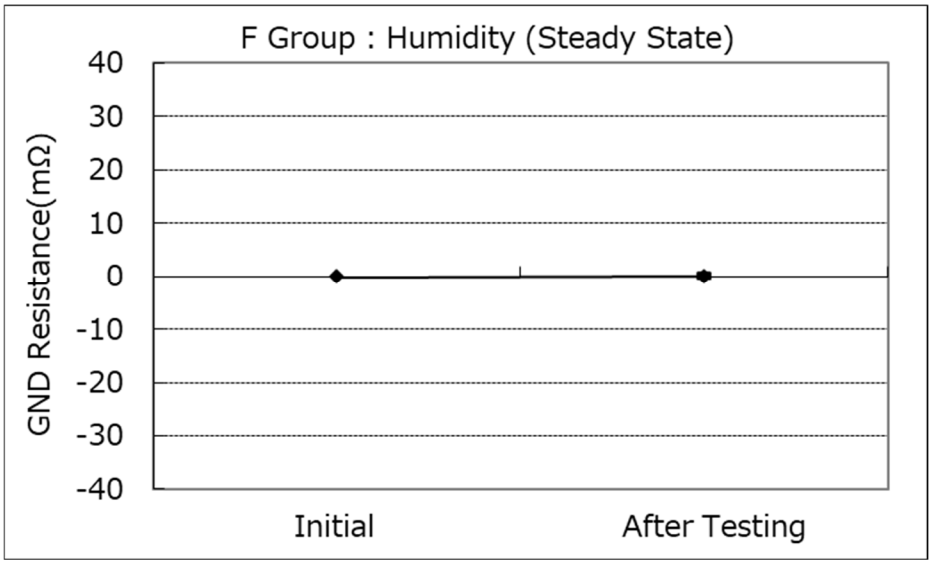

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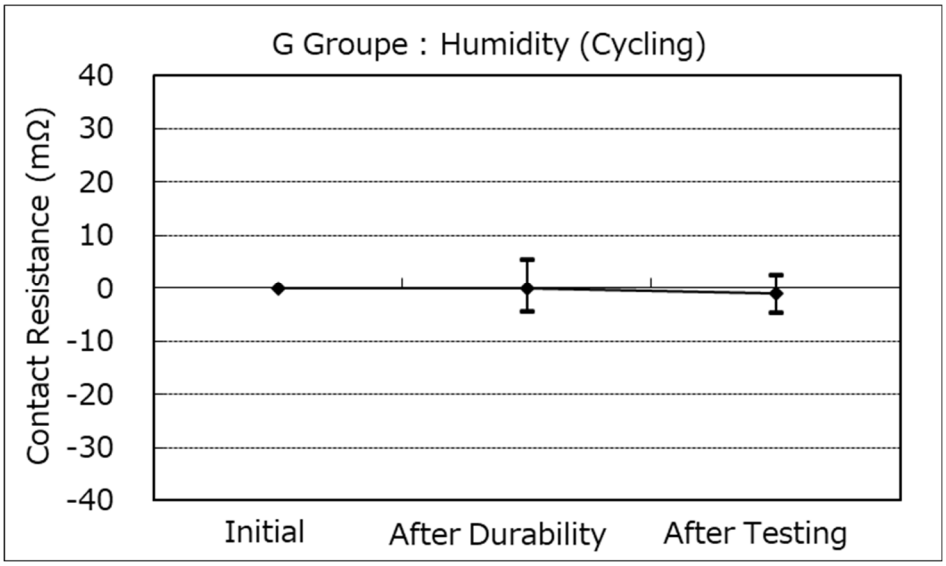

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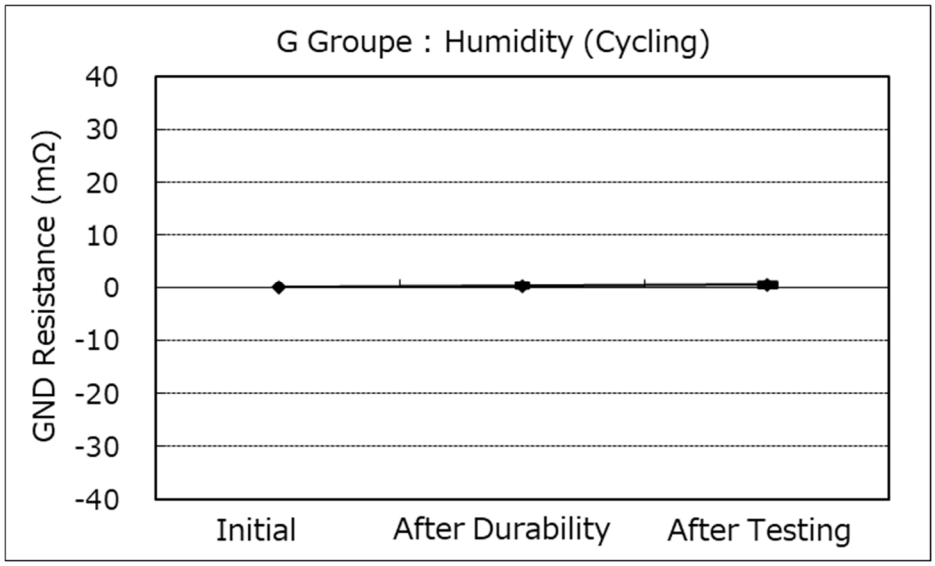

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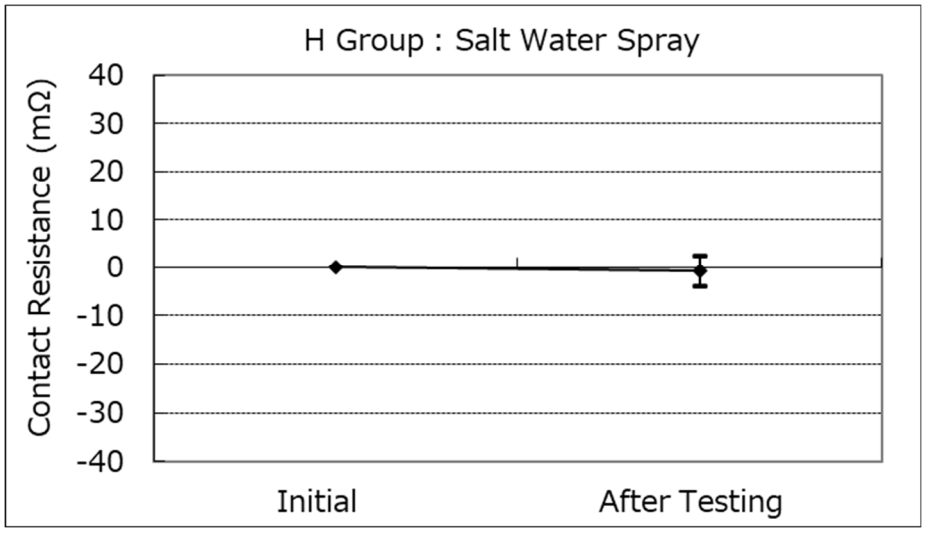

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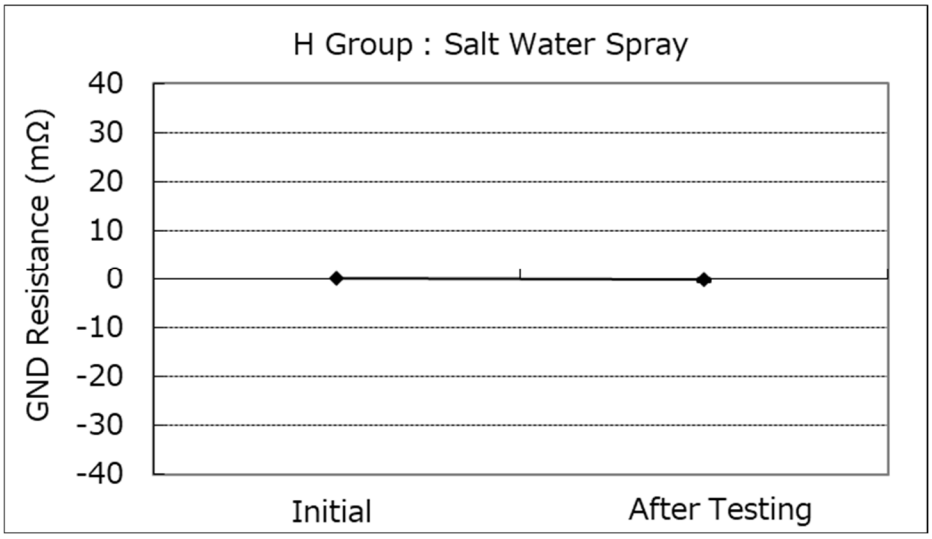

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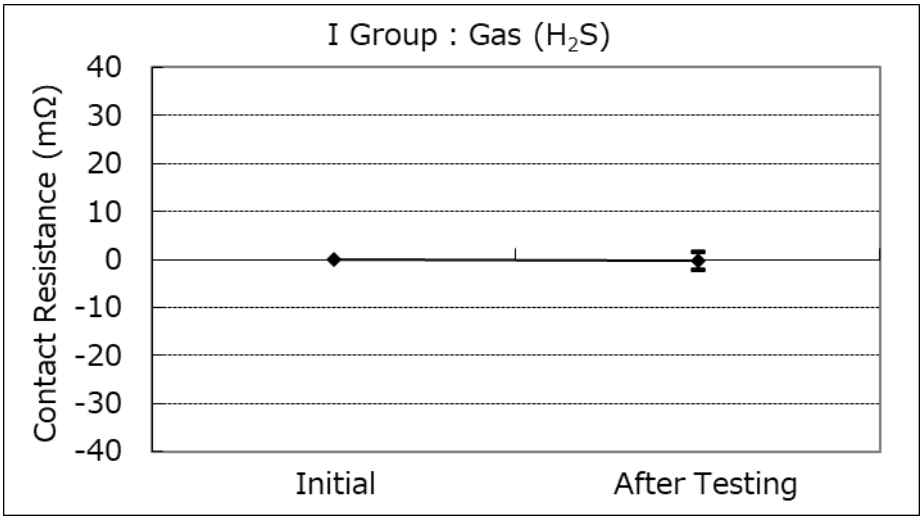
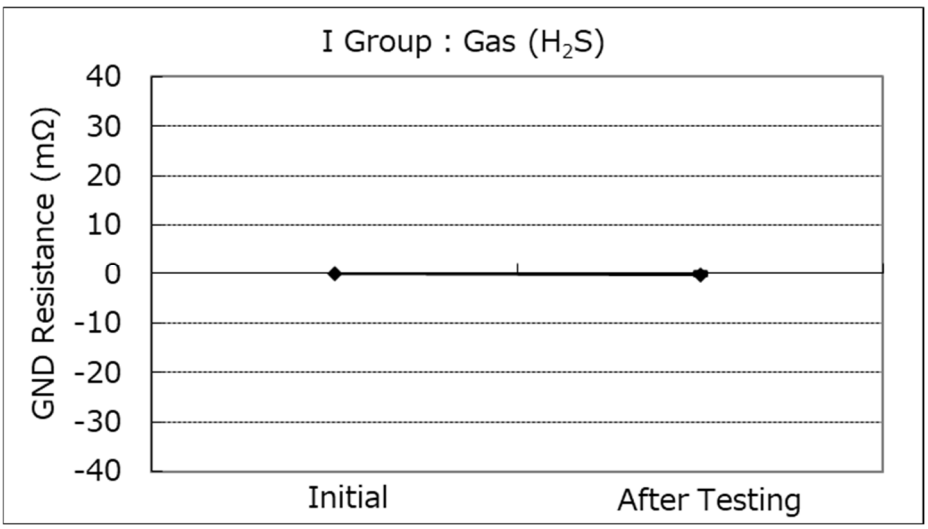
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