CABLINE®-VS II

Thick Au plating type

Part No. Plug: 20846-0**T-02, Receptacle: 20849-0**E-02

Test Report

Product Specification No. PRS-2398

2	T22035	February 4, 2022	M.Nakamura	T.Masunaga	H.Ikari
1	T21130	October 29, 2021	T.Ono	T.Masunaga	H.Ikari
0	T18128	November 12, 2018	T.Kurachi	-	Y.Shimada
Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. Purpose

To evaluate the performance of CABLINE-VS II Connector in accordance with PRS-2398.

2. Specimen

(1) CABLINE-VSII PLUG ASS'Y （Part No. 20846-0**T-02）
(2) CABLINE-VSII RECEPTACLE ASS'Y （Part No. 20849-0**E-02）

3. Test Sequence

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

4. Result

See Table 2-1 to 2-4, 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

All the specimens met the requirements of PRS-2398.

Table 1 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												
Un-mating 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 (Steady State)							4						
Humidity (Cycling)								6					
Salt Water Spray									2				
H_2S Gas										2			
Solder ability											1		
Soldering Heat Resistance												1	
Specimen Quantity.	5 pcs.	20 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					Judge
							AVE.	MAX.	MIN.	s	X±3s	
A Group Durability Cable Retention Force	Contact Resistance (mΩ)		Initial	AWG#36 275mΩMAX.	5	150	214.945	217.45	212.31	1.103	218.254	OK
			After Testing	AWG#36 ΔR=40mΩ MAX.			1.230	3.90	-0.71	0.964	4.122	OK
	GND Resistance (mΩ)		Initial	50mΩMAX.	5	5	9.312	9.48	9.18	0.121	9.675	OK
			After Testing	ΔR=40mΩ MAX.			1.230	3.90	-0.71	0.964	4.122	OK
	20P	Mating Force (N)	Initial	9.70N MAX.	5	5	4.756	5.22	4.44	0.286	5.614	OK
			After Testing	9.70N MAX.			3.408	3.58	3.13	0.180	3.948	OK
		Unmating Force (N)	Initial	2.00N MIN.	5	5	3.556	4.02	3.24	0.286	2.698	OK
			After Testing	2.00N MIN.			3.008	3.18	2.73	0.180	2.468	OK
		Cable Retention Force		9.80N MIN.	5	5	130.670	133.40	124.52	3.517	120.119	OK
	30P	Mating Force (N)	Initial	14.55N MAX.	5	5	7.138	7.40	6.89	0.220	7.798	OK
			After Testing	14.55N MAX.			4.856	5.02	4.64	0.137	5.267	OK
		Unmating Force (N)	Initial	3.00N MIN.	5	5	5.168	5.66	4.76	0.350	4.118	OK
			After Testing	3.00N MIN.			4.408	4.68	4.23	0.171	3.895	OK
		Cable Retention Force		14.70N MIN.	5	5	129.344	134.05	126.12	3.108	120.020	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	1.469	1.83	1.05	0.221	0.806	OK
			After Testing	0.2N MIN.	–	20	1.428	1.78	1.09	0.176	0.900	OK
C Group Conn. Lock			Initial	The lock does not damage and cancel.	5	5	No Abnormality					OK
D Group Vibration ↓ Shock	Contact Resistance (mΩ)		Initial	AWG#36 275mΩMAX.	5	150	214.828	218.38	211.61	1.643	219.757	OK
			After Vibration	AWG#36 ΔR=40mΩ MAX.			-0.362	1.81	-2.62	0.968	2.542	OK
			After Shock	AWG#36 ΔR=40mΩ MAX.			-0.921	1.26	-3.22	1.012	2.115	OK
	GND Resistance (mΩ)		Initial	50mΩMAX.	5	5	9.646	9.77	9.36	0.164	10.138	OK
			After Vibration	ΔR=40mΩ MAX.			0.568	0.89	0.28	0.268	1.372	OK
			After Shock	ΔR=40mΩ MAX.			-0.494	-0.21	-0.91	0.293	0.385	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

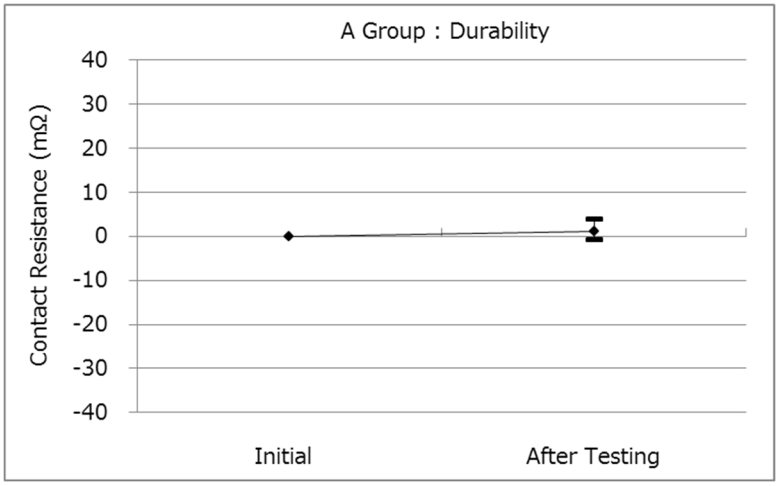
Table.2-2 Test result

Test Item	Contents of Measurement		Specifications	Set	n	Data					Judge
						AVE.	MAX.	MIN.	s	X±3s	
E Group Thermal Shock	Contact Resistance (mΩ)	Initial	AWG#36 275mΩMAX.	5	200	215.124	217.65	212.62	0.962	218.010	OK
		After Testing	AWG#36 ΔR=40mΩ MAX.			0.653	3.21	-1.88	0.948	3.497	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	9.036	9.21	8.92	0.119	9.393	OK
		After Testing	ΔR=40mΩ MAX.			-0.194	0.09	-0.49	0.205	0.421	OK
F Group High Temperature Life	Contact Resistance (mΩ)	Initial	AWG#36 275mΩMAX	5	200	215.975	219.09	212.82	1.113	219.314	OK
		After Testing	AWG#36 ΔR=40mΩ MAX.			1.409	5.20	-2.62	1.366	5.507	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	8.910	9.25	8.41	0.387	10.071	OK
		After Testing	ΔR=40mΩ MAX.			-0.216	0.19	-0.70	0.363	0.873	OK
G Group Humidity (Steady State)	Contact Resistance (mΩ)	Initial	AWG#36 275mΩMAX	5	150	215.319	218.40	212.12	1.409	219.546	OK
		After Testing	AWG#36 ΔR=40mΩ MAX.			-0.638	1.87	-2.60	0.862	1.948	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	9.536	9.70	9.25	0.184	10.088	OK
		After Testing	ΔR=40mΩ MAX.			0.258	0.50	0.03	0.170	0.768	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	75	2.86×10^4MΩMIN.					OK
		After Testing	500MΩMIN.			1.15×10^4MΩMIN.					OK
	D. W. Voltage	Initial	No abnormality adversely affecting the performance shall occur.	5	75	No Abnormality					OK
		After Testing				No Abnormality					OK
H Group Humidity (Cycling)	Contact Resistance (mΩ)	Initial	AWG#36 275mΩMAX.	5	150	215.066	219.59	210.12	2.001	221.069	OK
		After Durability	AWG#36 ΔR=40mΩ MAX.			0.958	3.61	-1.36	1.172	4.474	OK
		After Testing	AWG#36 ΔR=40mΩ MAX.			-0.156	2.62	-3.09	1.233	3.543	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	9.426	9.58	9.24	0.132	9.822	OK
		After Durability	ΔR=40mΩ MAX.			-0.042	0.35	-0.34	0.343	0.987	OK
		After Testing	ΔR=40mΩ MAX.			0.030	0.70	-0.40	0.486	1.488	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	75	1.60×10^4MΩMIN.					OK
		After Testing	500MΩMIN.			1.07×10^4MΩMIN.					OK
	D. W. Voltage	Initial	No abnormality adversely affecting the performance shall occur.	5	75	No Abnormality					OK
		After Testing				No Abnormality					OK

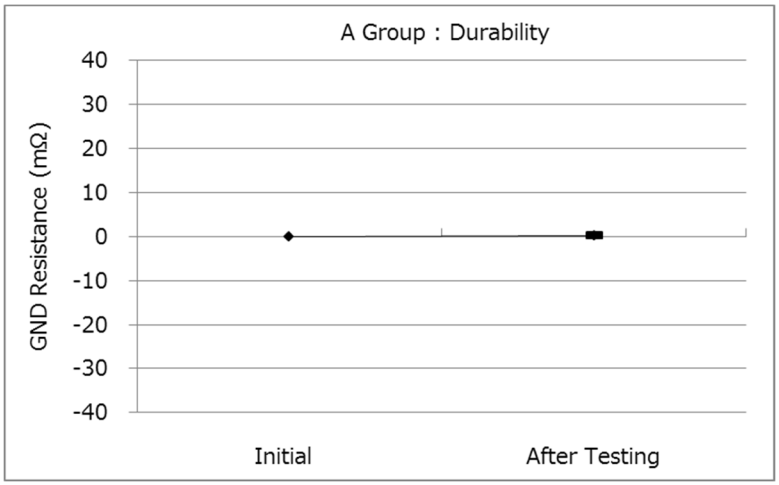
Table.2-3 Test result

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#36 275mΩMAX.	5	150	215.049	219.26	212.01	1.596	219.837	OK
		After Testing	AWG#36 ΔR=40mΩ MAX.			0.614	3.60	-2.69	1.256	4.382	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	9.492	9.58	9.38	0.087	9.753	OK
		After Testing	ΔR=40mΩ MAX.			0.204	0.26	0.12	0.051	0.357	OK
K Group H_2S Gas	Contact Resistance (mΩ)	Initial	AWG#36 275mΩMAX.	5	150	215.455	219.74	212.58	1.461	219.838	OK
		After testing	AWG#36 ΔR=40mΩ MAX.			-2.178	0.85	-4.54	1.126	1.200	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	9.586	10.07	9.39	0.280	10.426	OK
		After Testing	ΔR=40mΩ MAX.			0.314	0.47	0.12	0.155	0.779	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 abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					OK
N Group Temperature Rising	AWG#40 0.3A/Contact (30P)		ΔT=30℃ MAX.	5	5	ΔT=27.5℃MAX.					OK

Graph.1



Graph.2



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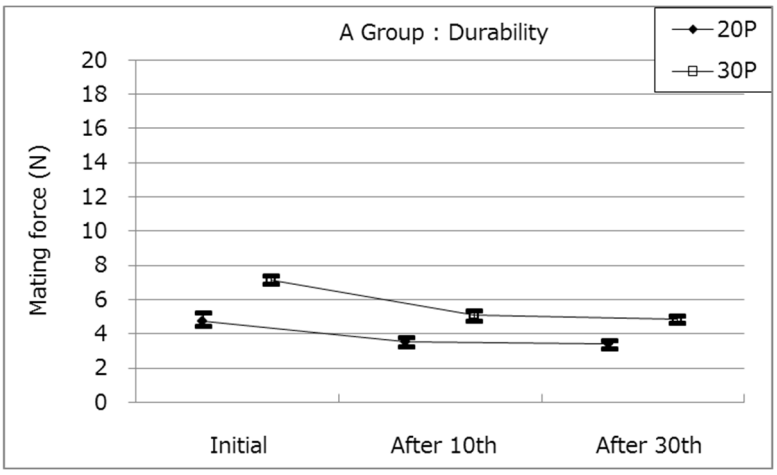

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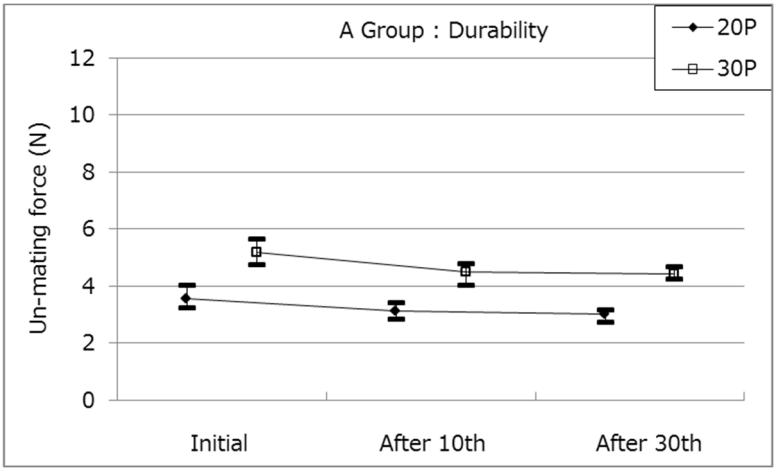

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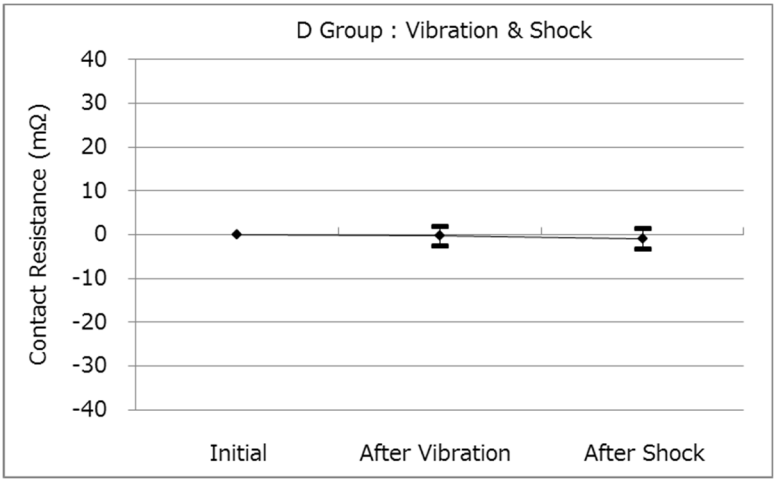

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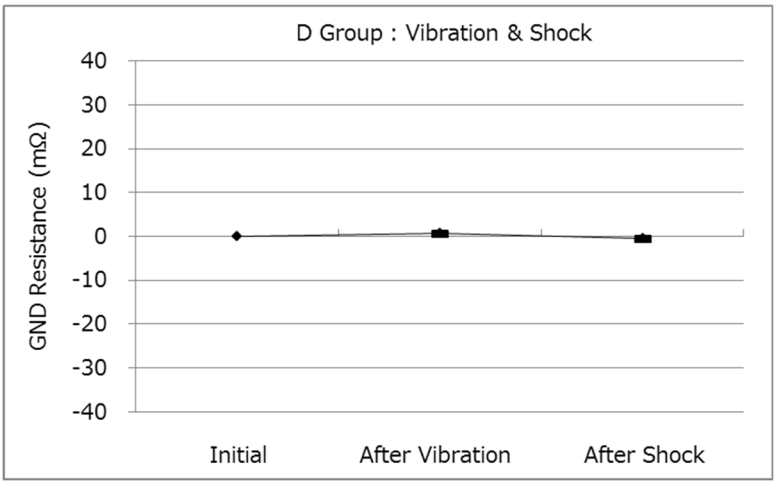

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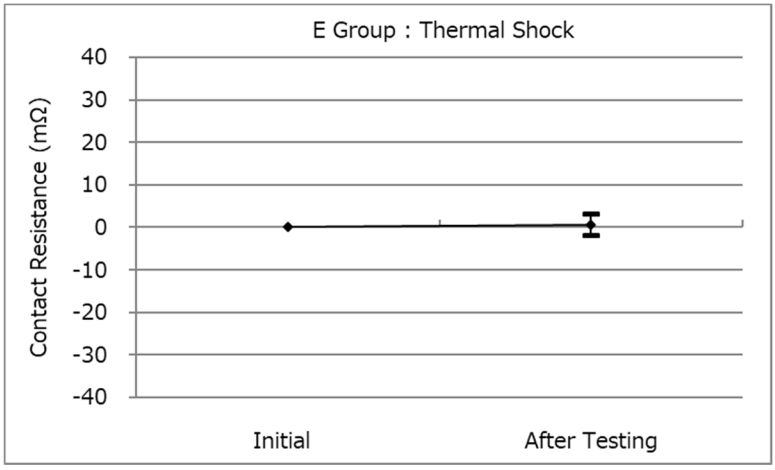

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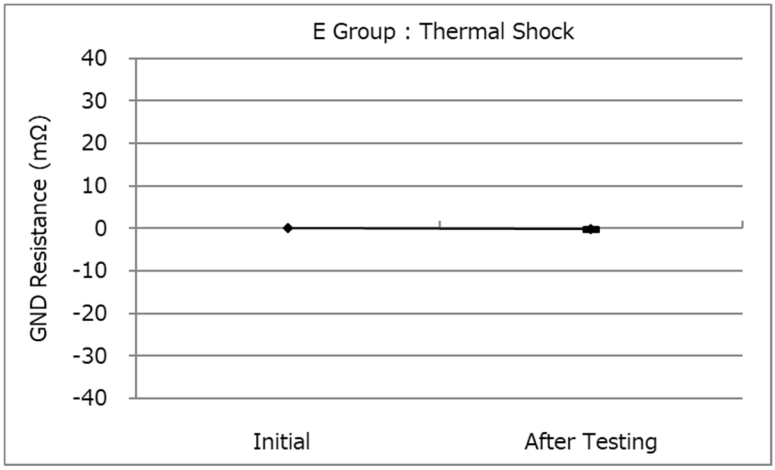

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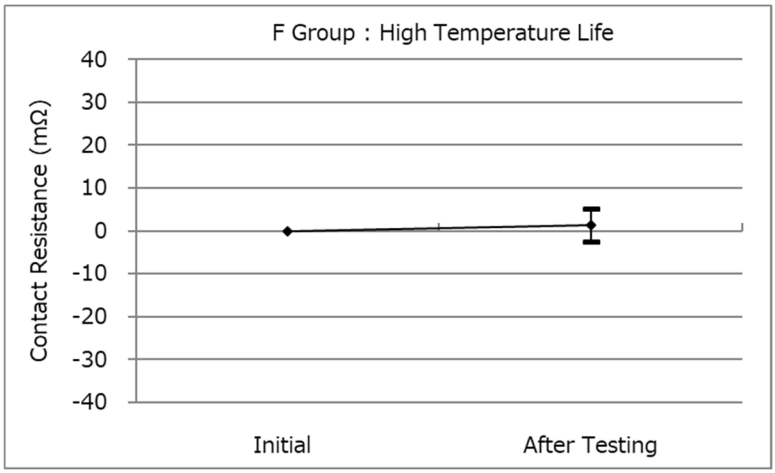

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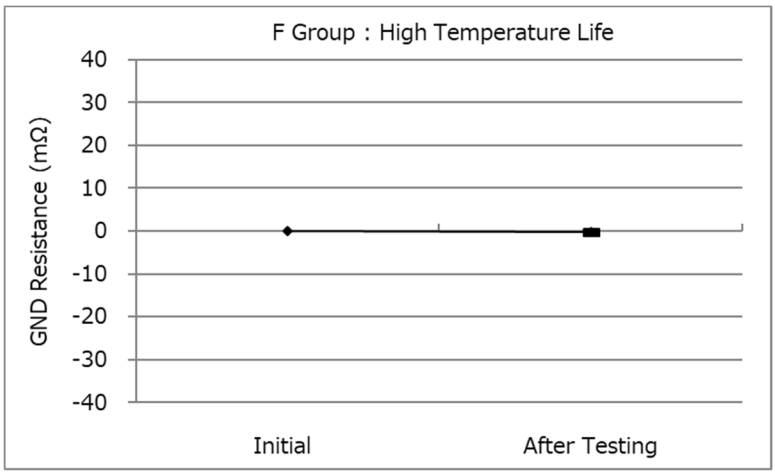

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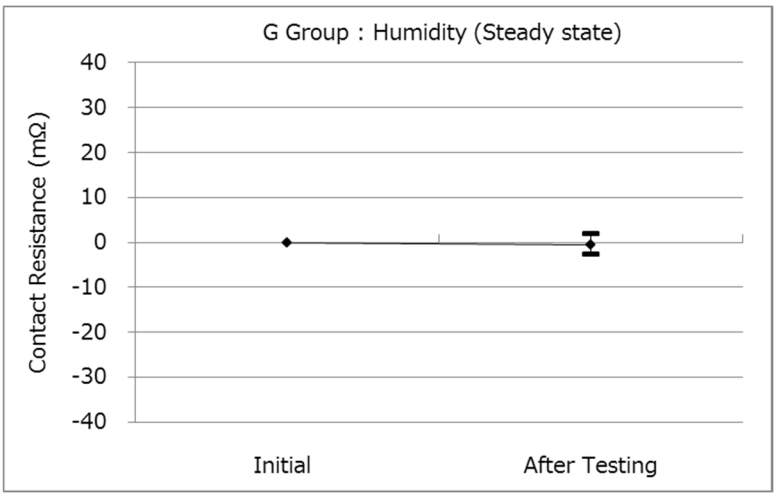

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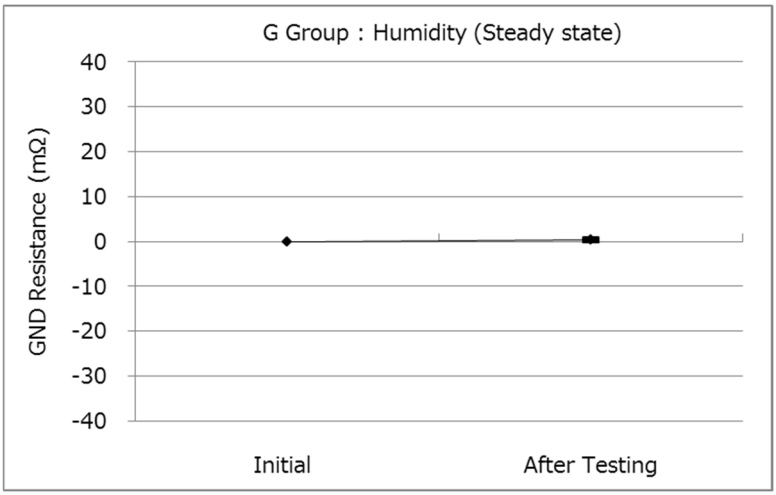

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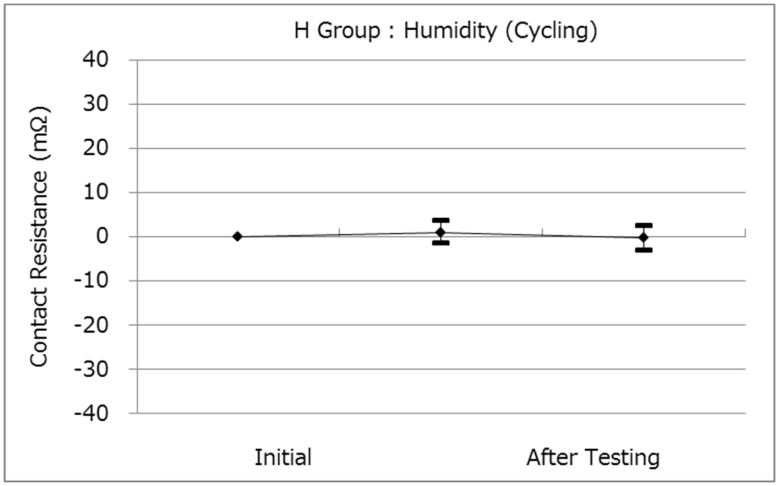

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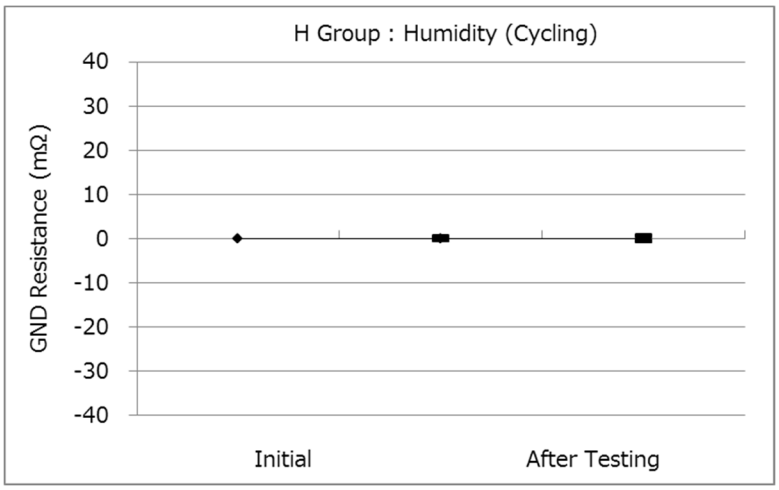

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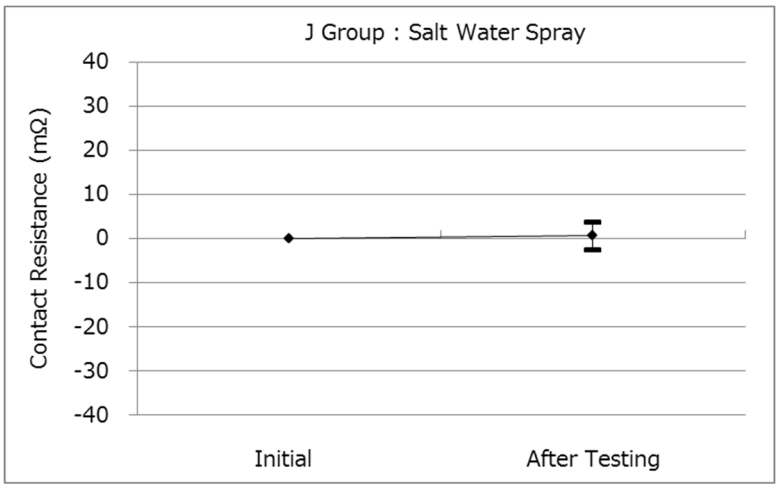

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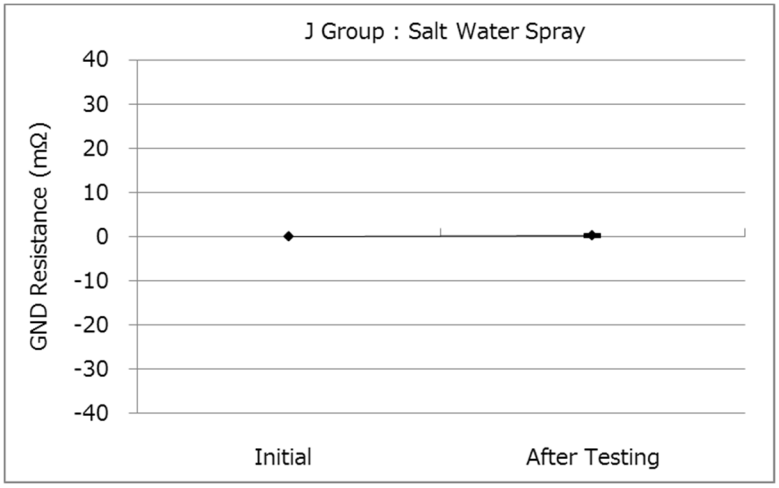

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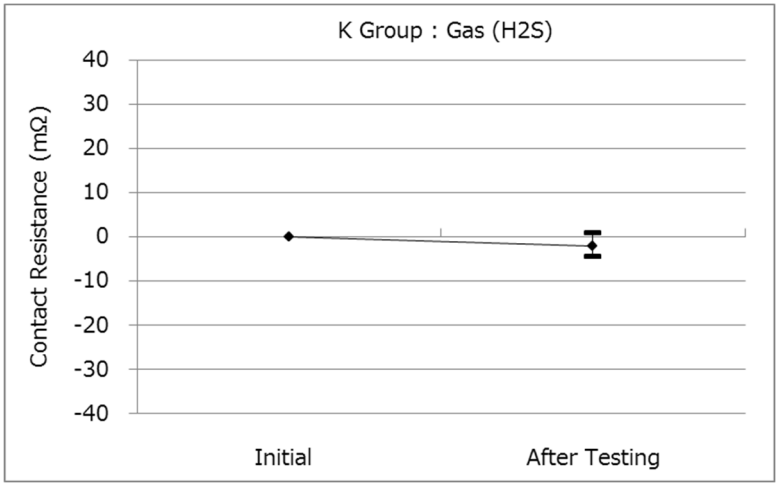

Graph.18