

CABLINE®-CAF

Part No. Plug: 3437-0**1 (SHELL Only), 20858-0**T-01 (SHELL ASS'Y)

Receptacle: 20525-※**E-※※※

Test Report

Product Specification no. PRS-2465

4	T23042	July 27, 2023	T,Onishi	M.Muro	H.Ikari
3	T21180	December 6, 2021	M.Muro	-	H.Ikari
2	T21068	August 27, 2021	R.Fukuda	M.Muro	H.Ikari
1	T19035	March 5, 2019	Y.Sasa	T.Masunaga	Y.Shimada
Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. Purpose

To evaluate the performance of CABLINE-CAF connector in accordance with PRS-2465.

2. Specimen

- (1) CABLINE-CAF SHELL ASS'Y (Part No. 20858-0**T-01)
CABLINE-CAF SHELL ONLY (Part No. 3437-0**1)
- (2) CABLINE-CA RECE. ASS'Y (Part No. 20525-~~**E-***~~)

3. Test Sequence

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

4. Result

See Tables 2-1 to 2-3, Graphs 1 to 18. For the details of the testing conditions and requirements, see PRS-2465.
The "n" in the tables show the number of measurement point.

5. Conclusion

All the specimens met the requirements of PRS-2465.

Table.1 Test Sequence and Sample Quantity

Test Item	Group								
	A	B	C	D	E	F	G	H	J
Contact resistance		2,6	1,3,5	1,3	1,3	1,5	1,5	1,3	1,3
Insulation resistance						2,6	2,6		
Dielectric withstanding voltage						3,7	3,7		
Temperature rising	1								
Mating force		1,5							
Unmating force		3,7							
Durability		4							
Vibration			2						
Shock			4						
Thermal shock				2					
High temperature life					2				
Humidity (Steady State)						4			
Humidity (Cycling)							4		
Saltwater spray								2	
H ₂ S gas									2
Specimen quantity.	5 pcs	5 pcs	5 pcs	5 pcs	5 pcs	5 pcs	5 pcs	5 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 Temperature Rising	0.3A/Contact*1 18.0A/Connector		ΔT=30°C MAX.	5	5	ΔT=24.3°C MAX.					OK	
	0.5A/Contact (up to 14Pin)*2		ΔT=30°C MAX.	5	5	ΔT=26.3°C MAX.					OK	
B Group Durability	Contact Resistance (mΩ)	Initial	60mΩ MAX.	5	300	18.187	23.22	12.97	2.023	24.256	OK	
		After Testing	ΔR=40mΩ MAX.			0.659	4.67	-3.67	1.493	5.138	OK	
	GND Resistance (mΩ)	Initial	60mΩ MAX.	5	5	5.861	6.73	4.59	0.704	7.973	OK	
		After Testing	ΔR=40mΩ MAX.			-0.715	0.21	-1.83	0.766	1.583	OK	
	Mating Force (N)	40P	Initial	11.07N MAX.	5	5	8.128	8.80	7.10	0.710	10.258	OK
			After Testing	11.07N MAX.			6.440	6.92	5.42	0.591	8.213	OK
		60P	Initial	16.61N MAX.	5	5	9.673	10.16	8.99	0.439	10.990	OK
			After Testing	16.61N MAX.			8.723	9.03	8.02	0.420	9.983	OK
	Un-mating Force (N)	40P	Initial	1.44N MIN.	5	5	4.674	5.11	4.37	0.279	3.837	OK
			After Testing	1.44N MIN.			4.278	4.82	3.80	0.380	3.138	OK
		60P	Initial	2.16N MIN.	5	5	6.282	6.58	5.86	0.263	5.493	OK
			After Testing	2.16N MIN.			5.977	6.37	5.49	0.322	5.011	OK
C Group Vibration ↓ Shock	Contact Resistance (mΩ)	Initial	60mΩ MAX.	5	300	17.046	21.75	12.51	1.834	22.548	OK	
		After Vibration	ΔR=40mΩ MAX.			1.312	5.03	-2.18	1.262	5.098	OK	
		After Shock	ΔR=40mΩ MAX.			3.179	7.51	-0.96	1.473	7.598	OK	
	GND Resistance (mΩ)	Initial	60mΩ MAX.	5	5	5.066	6.61	4.06	0.816	7.514	OK	
		After Vibration	ΔR=40mΩ MAX.			-0.071	1.86	-1.75	1.042	3.055	OK	
		After Shock	ΔR=40mΩ MAX.			0.249	2.05	-1.78	1.216	3.897	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	

*1 Temperature Rising test is a result when applied ratings current (0.3A/contact) whole contacts of 60pin connector (0.3A×60pin= 18.0A).

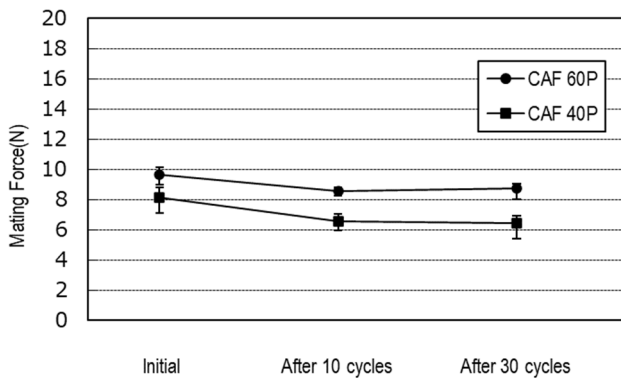
*2 Temperature Rising test is a result when applied ratings current (0.5A/contact) each adjacent 14pin contacts of 60pin connector (0.5A×14pin= 7.0A).

Table.2-2 Test result

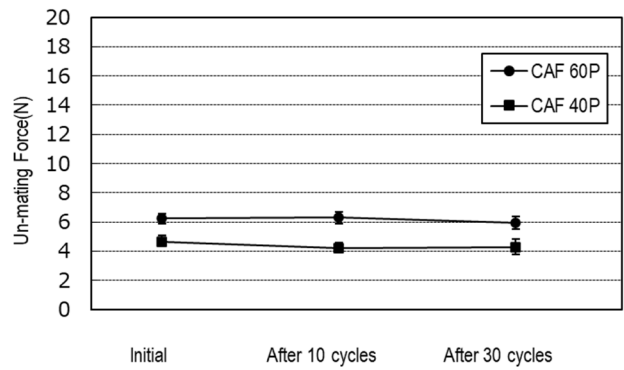
Test Item	Contents of Measurement		Specifications	Set	N	Data					Judge
						AVE.	MAX.	MIN.	s	X±3s	
D Group Thermal Shock	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	300	17.544	22.28	12.77	1.850	23.094	OK
		After Testing	ΔR=40mΩ MAX.			-2.603	2.85	-8.50	1.997	3.388	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	5.351	6.50	4.23	0.900	8.051	OK
		After Testing	ΔR=40mΩ MAX.			0.200	1.55	-1.00	0.857	2.771	OK
E Group High Temperature Life	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	300	17.478	20.77	14.82	1.144	20.910	OK
		After Testing	ΔR=40mΩ MAX.			4.663	8.47	1.54	1.334	8.665	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	5.621	6.30	3.95	0.726	7.799	OK
		After Testing	ΔR=40mΩ MAX.			-0.865	1.15	-1.99	1.046	2.273	OK
F Group Humidity (Steady State)	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	300	17.544	22.07	12.71	1.848	23.088	OK
		After Testing	ΔR=40mΩ MAX.			1.553	6.10	-1.91	1.588	6.317	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	5.077	6.54	4.11	0.956	7.945	OK
		After Testing	ΔR=40mΩ MAX.			0.155	2.43	-2.62	1.654	5.117	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	150	8.5×10 ⁴ MΩMIN.					OK
		After Testing	500MΩMIN.			2.8×10 ³ MΩMIN.					OK
	Dielectric withstanding voltage	Initial	No abnormalities such as creeping discharge, flashover, insulator breakdown occur.	5	150	No Abnormality					OK
		After Testing				No Abnormality					OK

Table.2-3 Test result

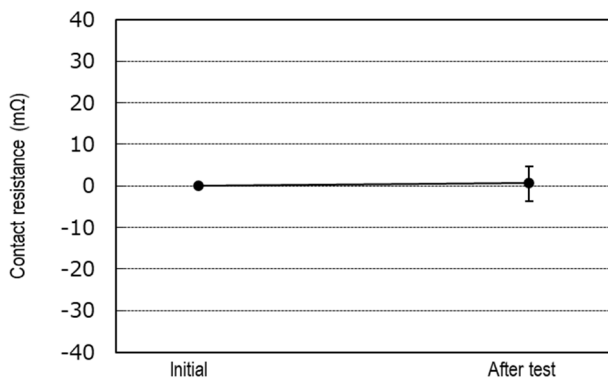
Test Item	Contents of Measurement		Specifications	Set	N	Data					Judge
						AVE.	MAX.	MIN.	s	X±3s	
G Group Humidity (Cycling)	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	300	17.518	22.48	12.57	1.848	23.062	OK
		After Testing	ΔR=40mΩ MAX.			4.840	9.86	-0.27	1.974	10.762	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	5.927	6.88	4.33	0.872	8.543	OK
		After Testing	ΔR=40mΩ MAX.			-0.418	1.32	-2.70	1.272	3.398	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	150	7.9×10 ⁴ MΩMIN.					OK
		After Testing	500MΩMIN.			8.8×10 ³ MΩMIN.					OK
	Dielectric withstanding voltage	Initial	No abnormalities such as creeping discharge, flashover, insulator breakdown occur.	5	150	No Abnormality					OK
		After Testing				No Abnormality					OK
H Group Salt Water Spray	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	300	16.578	22.32	12.05	2.053	22.737	OK
		After Testing	ΔR=40mΩ MAX.			3.723	9.96	-2.75	2.374	10.845	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	4.851	6.34	3.96	0.772	7.167	OK
		After Testing	ΔR=40mΩ MAX.			0.725	2.61	-0.75	1.400	4.925	OK
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No Abnormality					OK
J Group H ₂ S Gas	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	300	17.437	20.61	14.88	1.137	20.848	OK
		After testing	ΔR=40mΩ MAX.			2.355	7.95	-2.86	1.967	8.256	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	5.069	6.33	4.08	0.632	6.965	OK
		After Testing	ΔR=40mΩ MAX.			0.129	1.09	-1.03	0.793	2.508	OK
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No Abnormality					OK



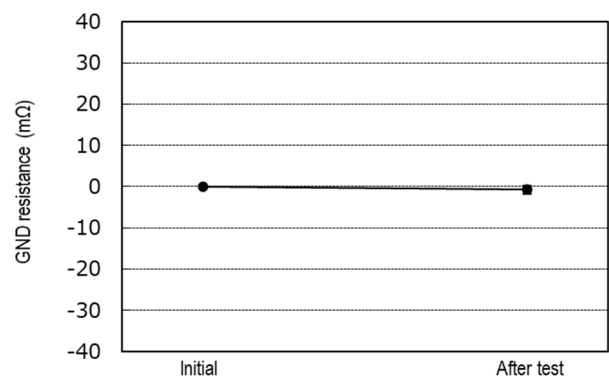
Graph1. A change of mating force
(B Group: Durability)



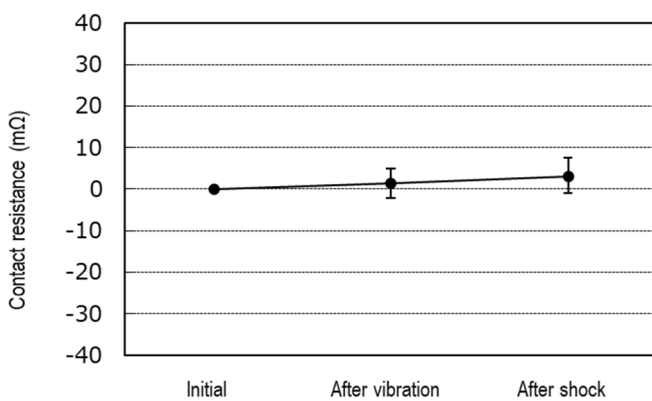
Graph2. A change of un-mating force
(B Group: Durability)



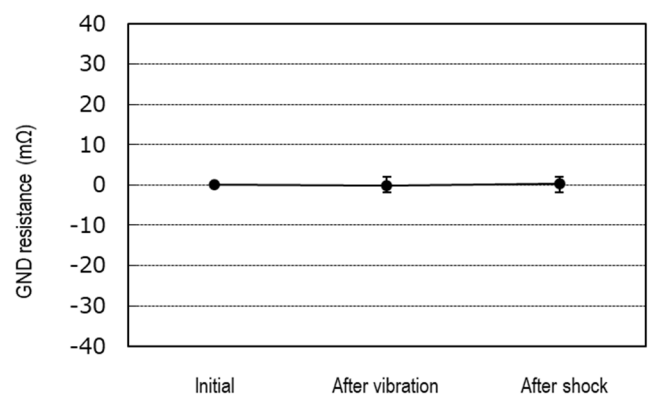
Graph3. A change of contact resistance
(B Group: Durability)



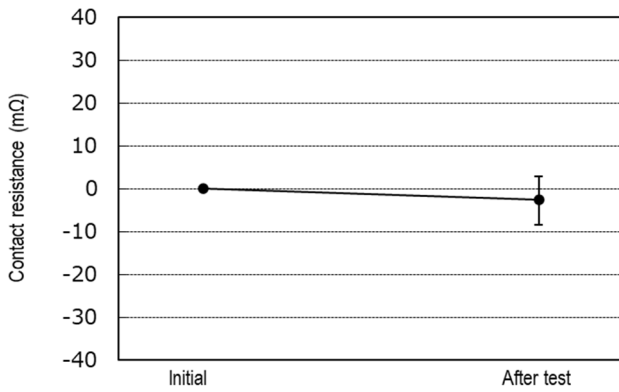
Graph4. A change of GND resistance
(B Group: Durability)



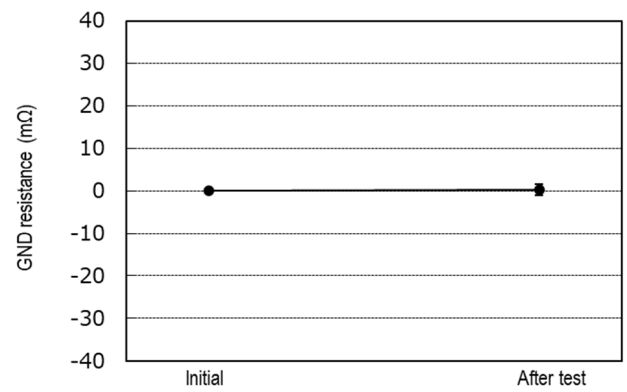
Graph5. A change of contact resistance
(C Group: Vibration/Shock)



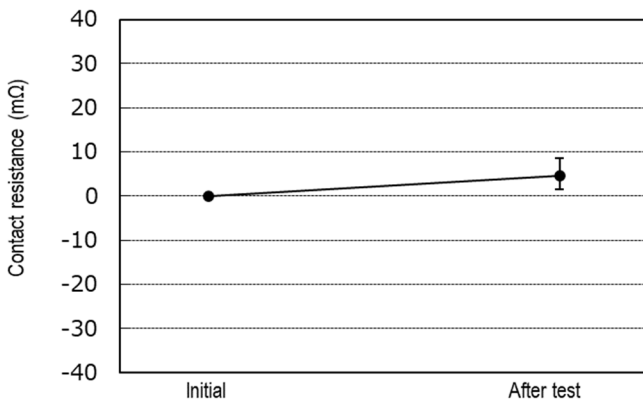
Graph6. A change of GND resistance
(C Group: Vibration/Shock)



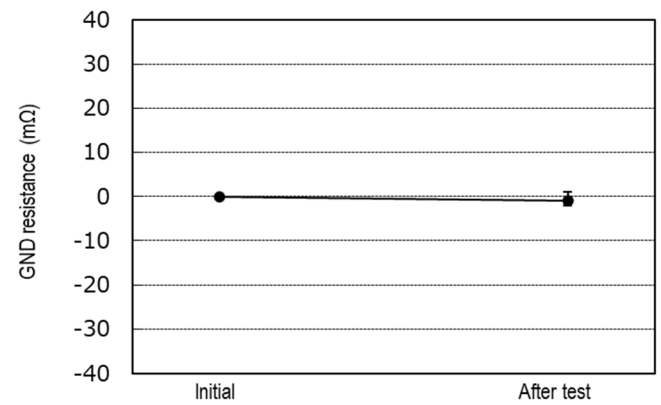
Graph7. A change of contact resistance
(D Group: Thermal shock)



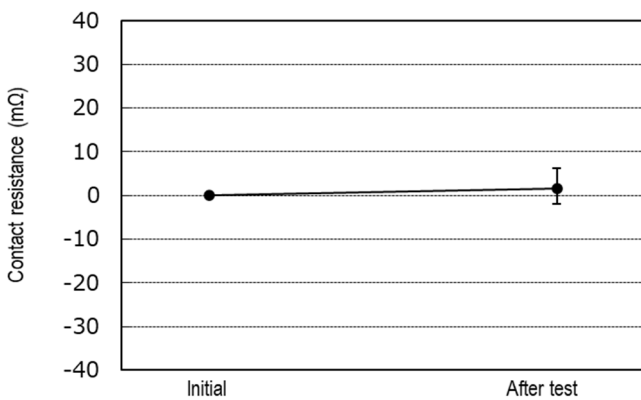
Graph8. A change of GND resistance
(D Group: Thermal shock)



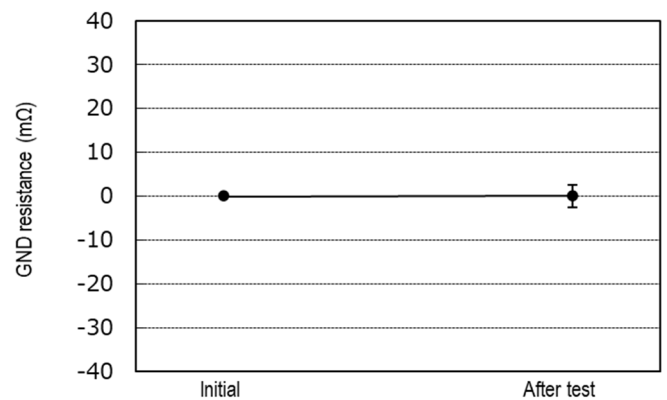
Graph9. A change of contact resistance
(E Group: High temperature life)



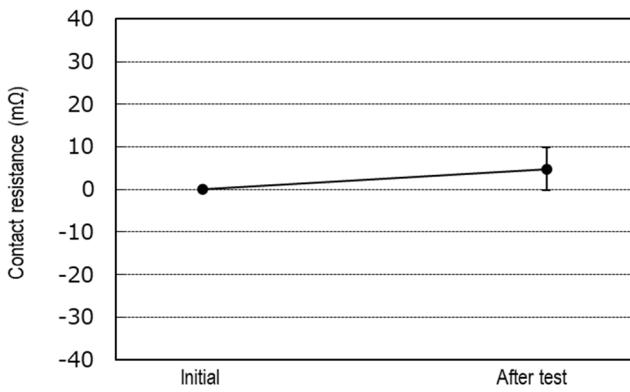
Graph10. A change of GND resistance
(E Group: High temperature life)



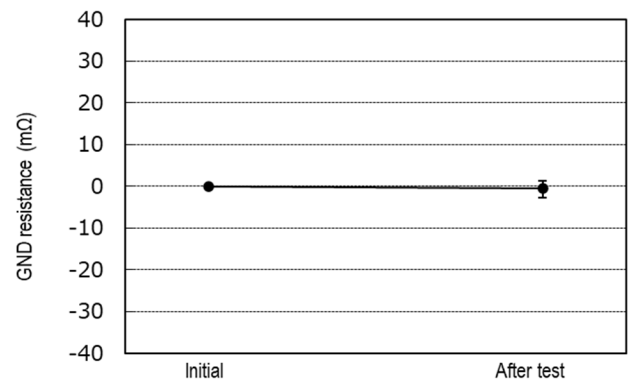
Graph11. A change of contact resistance
(F Group: Humidity (Steady state))



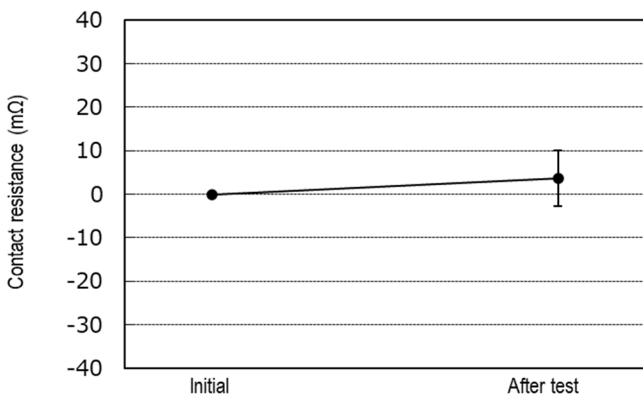
Graph12. A change of GND resistance
(F Group: Humidity (Steady state))



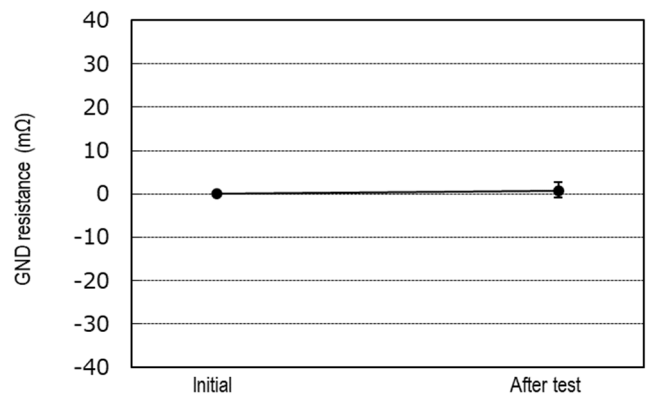
Graph13. A change of contact resistance
(G Group: Humidity(Cycling))



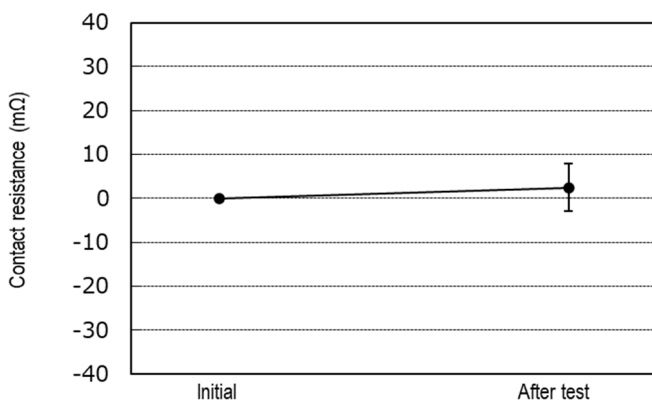
Graph14. A change of GND resistance
(G Group: Humidity(Cycling))



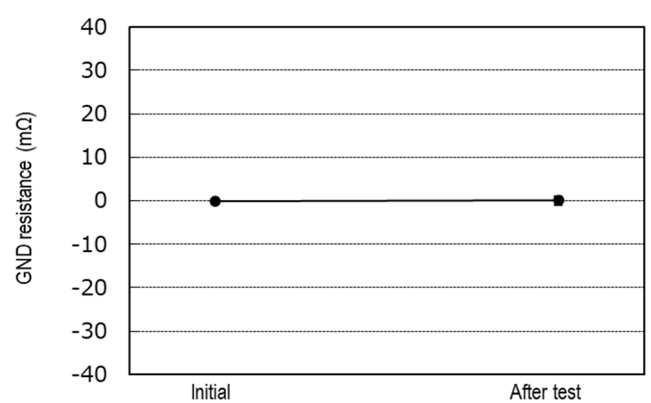
Graph15. A change of contact resistance
(H Group: Salt spray)



Graph16. A change of GND resistance
(H Group: Salt spray)



Graph17. A change of contact resistance
(J Group: H₂S Gas)



Graph18. A change of GND resistance
(J Group: H₂S Gas)