

CABLINE®-CAP HARNESS 50P

Part No. Plug:81863-100B-** Receptacle:20525-050E-02

Test Report

Product Specification no. PRS-2832

Rev.	ECN	Date	Prepared by	Checked by	Approved by
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0	T23025	May 23, 2023	T. Onishi	M. Muro	H. Ikari

1. Purpose

To evaluate the performance of CABLINE-CAP Harness in accordance with PRS-2832.

2. Specimen

- (1) CABLINE-CAP HARNESS 50P (Part No. 81863-100B-**)
- (2) CABLINE-CA RECEPTACLE ASS'Y (Part No. 20525-050E-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-2832.
The "n" in the tables show the number of measurement points.

5. Conclusion

All the specimens met the requirements of PRS-2832.

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	1,5,7	1,3	1,3	
Insulation resistance					2,6	2,8			
Dielectric withstanding voltage					3,7	3,9			
Temperature rising									1
Mating force	1,5								
Unmating force	3,7								
Durability	4					4 (10cyc.)			
Cable retention force	8								
Vibration		2							
Shock		4							
Thermal shock			2						
High temperature life				2					
Humidity (Steady State)					4				
Humidity (Cycling)						6			
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					Judgment
						AVE.	MAX.	MIN	s	X±3s	
A Group Durability ↓ Cable Retention Force (N)	C/T Resistance (mΩ)	Initial	270mΩMAX.	5	160	215.410	221.57	212.02	2.267	222.211	OK
		After Testing	ΔR=40mΩMAX.			0.438	4.54	-3.34	1.683	5.487	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	11.287	11.51	11.02	0.152	11.743	OK
		After Testing	ΔR=40mΩMAX.			-0.030	0.37	-0.35	0.223	0.639	OK
	Mating Force (N)	Initial	18.90N MAX.	5	5	8.667	10.46	7.43	1.202	12.273	OK
		After Testing				6.581	7.17	6.15	0.385	7.736	OK
	Unmating Force (N)	Initial	2.50N MIN.	5	5	4.825	5.26	4.44	0.377	3.694	OK
		After Testing				4.616	5.08	3.99	0.414	3.374	OK
	Cable Retention Force (N)		24.5N MIN.	5	5	36.427	37.37	34.60	1.142	33.001	OK
	B Group Vibration ↓ Shock	C/T Resistance (mΩ)	Initial	270mΩMAX.	5	160	216.136	221.27	211.18	2.297	223.027
After Vibration			ΔR=40mΩMAX.	0.537			4.42	-3.75	1.555	5.202	OK
After Shock			ΔR=40mΩMAX.	-0.187			4.46	-4.15	1.581	4.556	OK
GND Resistance (mΩ)		Initial	50mΩMAX.	5	5	11.922	12.48	11.45	0.313	12.861	OK
		After Vibration	ΔR=40mΩMAX.			-0.204	0.66	-0.53	0.342	0.822	OK
		After Shock	ΔR=40mΩMAX.			0.270	0.61	-0.55	0.403	1.479	OK
Electrical discontinuity		During Vibration	No electrical discontinuity greater than 1μs shall occur.	5	5	No electrical discontinuity greater than 1μs shall occur.					OK
		During Shock				No electrical discontinuity greater than 1μs shall occur.					OK
Appearance		After Vibration	No abnormality adversely affecting the performance shall occur.	5	5	No abnormality adversely affecting the performance shall occur.					OK
		After Shock				No abnormality adversely affecting the performance shall occur.					OK

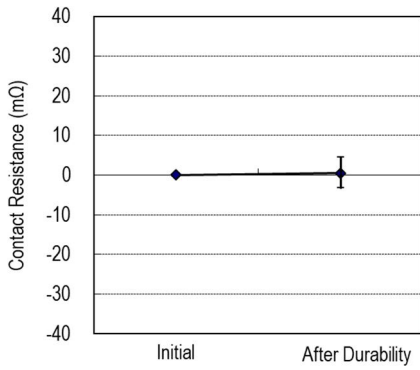
Table 2-2 Test result

Test Item	Contents of Measurement		Specifications	Set	N	Data					Judgment
						AVE.	MAX.	MIN	s	X±3s	
C Group Thermal shock	C/T Resistance (mΩ)	Initial	270mΩMAX.	5	160	215.902	222.62	212.07	2.259	222.679	OK
		After Testing	ΔR=40mΩMAX.			1.609	5.93	-2.56	1.739	6.826	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	11.851	12.22	11.28	0.289	12.718	OK
		After Testing	ΔR=40mΩMAX.			0.454	0.87	0.07	0.308	1.378	OK
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No abnormality adversely affecting the performance shall occur.					OK
	D Group High Temperature Life	C/T Resistance (mΩ)	Initial	270mΩMAX.	5	160	215.122	220.44	210.86	1.789	220.489
After Testing			ΔR=40mΩMAX.	1.789			5.64	-4.1	1.966	7.687	OK
GND Resistance (mΩ)		Initial	50mΩMAX.	5	5	12.051	12.67	11.7	0.28	12.891	OK
		After Testing	ΔR=40mΩMAX.			-0.52	-0.02	-1.08	0.339	0.497	OK
Appearance		After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No abnormality adversely affecting the performance shall occur.					OK
E Group Humidity (Steady State)		C/T Resistance (mΩ)	Initial	270mΩMAX.	5	160	216.690	220.56	212.64	1.652	221.646
	After Testing		ΔR=40mΩMAX.	-1.106			3.50	-4.52	1.598	3.688	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	10.707	10.87	10.48	0.135	11.112	OK
		After Testing	ΔR=40mΩMAX.			1.530	2.24	0.51	0.572	3.246	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	80	1.04×10 ⁶ MΩMIN.					OK
		After Testing	500MΩMIN.			8.30×10 ⁵ MΩMIN.					OK
	Dielectric withstanding voltage	Initial	No abnormalities such as creeping discharge, flashover, and insulator breakdown occur.	5	80	No abnormalities such as creeping discharge, flashover, and insulator breakdown occur.					OK
		After Testing	No abnormalities such as creeping discharge, flashover, and insulator breakdown occur.			No abnormalities such as creeping discharge, flashover, and insulator breakdown occur.					OK
Appearance	After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No abnormality adversely affecting the performance shall occur.					OK	

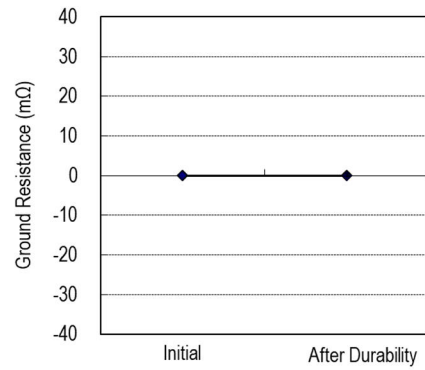
Table 2-3 Test result

Test Item	Contents of Measurement		Specifications	Set	N	Data					Judgment
						AVE.	MAX.	MIN	s	X±3s	
F Group Humidity (Cycling)	C/T Resistance (mΩ)	Initial	270mΩMAX.	5	160	218.181	222.68	214.93	1.642	223.107	OK
		After Testing	ΔR=40mΩMAX.			-0.536	4.52	-4.95	1.974	5.386	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	11.802	12.53	11.41	0.336	12.810	OK
		After Testing	ΔR=40mΩMAX.			0.859	1.36	0.13	0.309	1.786	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	80	1.14×10 ⁶ MΩMIN.					OK
		After Testing	500MΩMIN.			7.16×10 ⁴ MΩMIN.					OK
	Dielectric withstanding voltage	Initial	No abnormalities such as creeping discharge, flashover, and insulator breakdown occur.	5	80	No abnormalities such as creeping discharge, flashover, and insulator breakdown occur.					OK
		After Testing				No abnormalities such as creeping discharge, flashover, and insulator breakdown occur.					OK
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No abnormality adversely affecting the performance shall occur.					OK
	G Group Salt Spray	C/T Resistance (mΩ)	Initial	270mΩMAX.	5	160	217.032	222.95	211.56	2.122	223.398
After Testing			ΔR=40mΩMAX.	0.816			6.72	-4.90	2.522	8.382	OK
GND Resistance (mΩ)		Initial	50mΩMAX.	5	5	11.912	12.38	11.50	0.287	12.773	OK
		After Testing	ΔR=40mΩMAX.			-0.577	0.23	-1.35	0.490	0.893	OK
Appearance		After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No abnormality adversely affecting the performance shall occur.					OK
H Group Gas(H ₂ S)	C/T Resistance (mΩ)	Initial	270mΩMAX.	5	160	219.070	225.58	214.44	2.345	226.105	OK
		After Testing	ΔR=40mΩMAX.			1.232	4.99	-4.70	2.125	7.607	OK
	GND Resistance (mΩ)	Initial	50mΩMAX.	5	5	11.384	11.76	11.14	0.217	12.035	OK
		After Testing	ΔR=40mΩMAX.			-0.096	0.74	-0.71	0.404	1.116	OK
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No abnormality adversely affecting the performance shall occur.					OK
J Group Temperature Rising	AWG#38 0.43A		ΔT=30°C MAX.	5	5	ΔT=28.6°C MAX.					OK

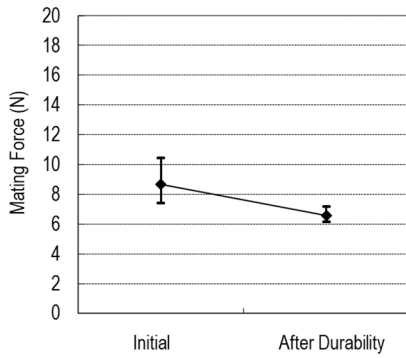
A Group



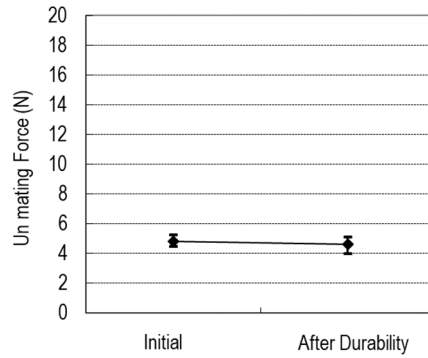
Graph 1. Contact Resistance



Graph 2. Ground Resistance

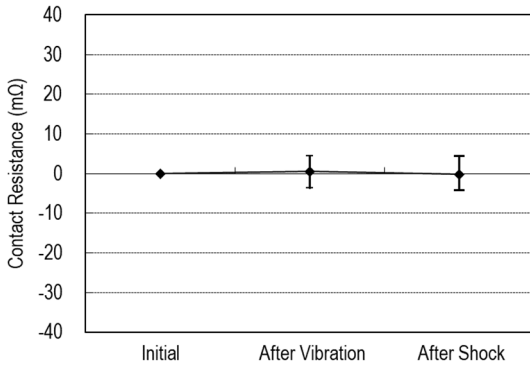


Graph 3. Mating Force

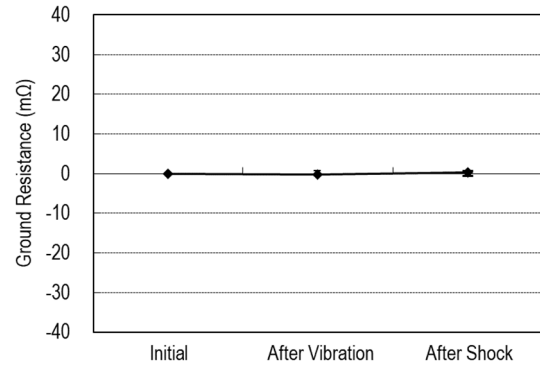


Graph 4. Un-mating Force

B Group

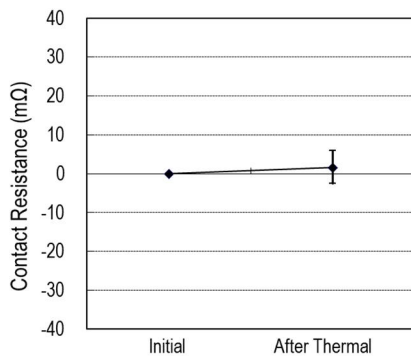


Graph 5. Contact Resistance

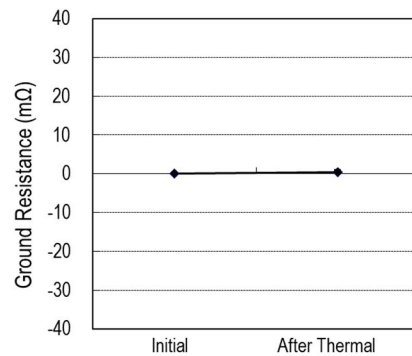


Graph 6. Ground Resistance

C Group

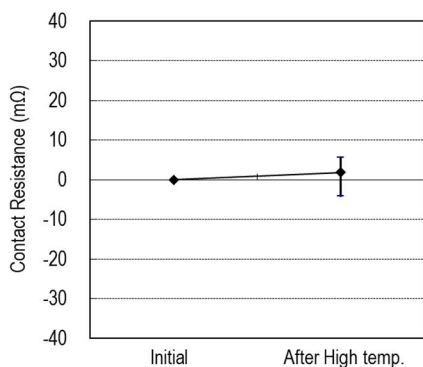


Graph 7. Contact Resistance

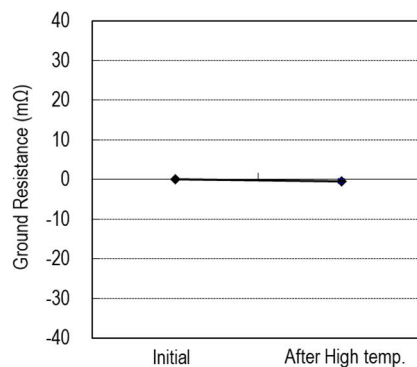


Graph 8. Ground Resistance

D Group

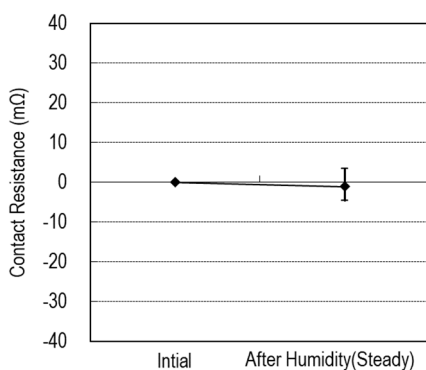


Graph 9. Contact Resistance

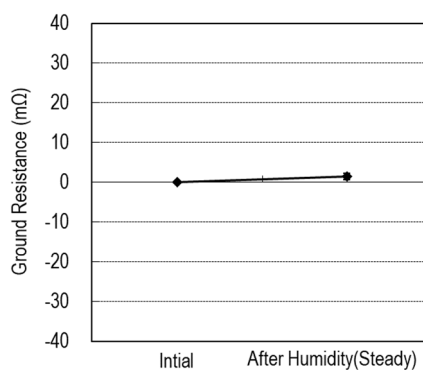


Graph 10. Ground Resistance

E Group

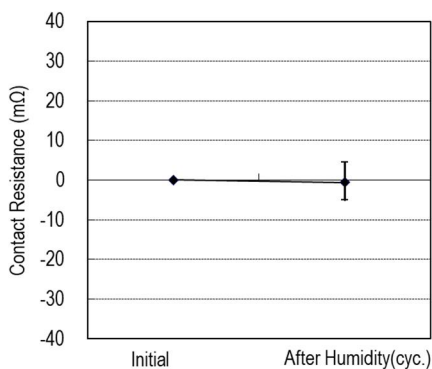


Graph 11. Contact Resistance

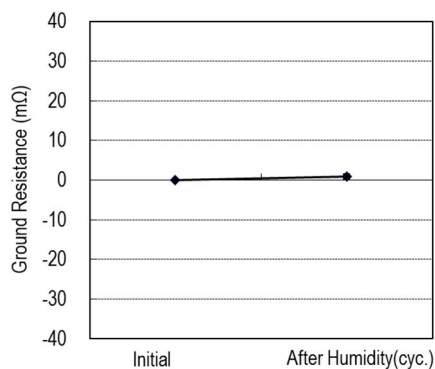


Graph 12. Ground Resistance

F Group

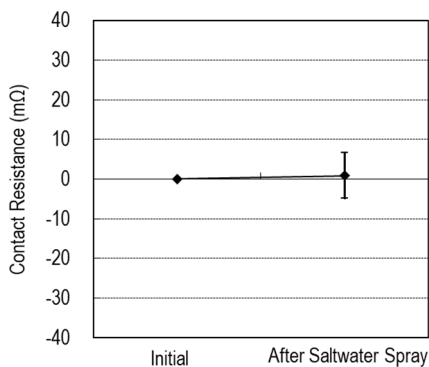


Graph 13. Contact Resistance

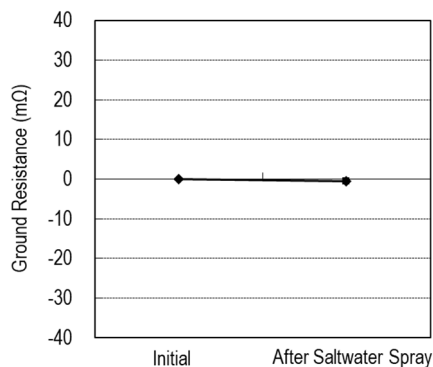


Graph 14. Ground Resistance

G Group

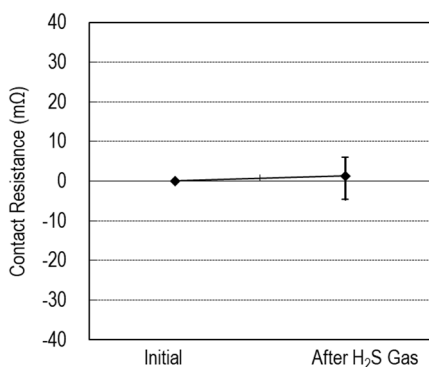


Graph 15. Contact Resistance

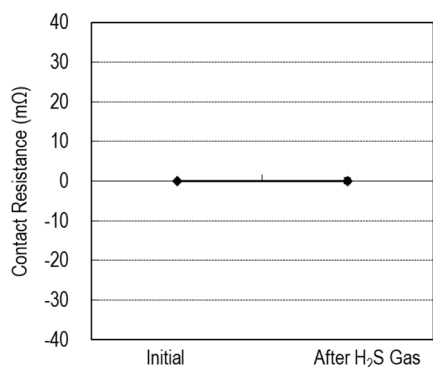


Graph 16. Ground Resistance

H Group



Graph 17. Contact Resistance



Graph 18. Ground Resistance