CABLINE®-CA IIF

Part No. Plug: 20856-0**T-01

Receptacle: 20682-0**E-02※

Test Report

Product Specification no. PRS-2418

Rev.	ECN	Date	Prepared by	Checked by	Approved by
3	T21179	December 6, 2021	M.Muro	-	H.Ikari
2	T21025	May 24, 2021	R.Fukuda	M.Muro	H.Ikari
1	T20065	September 1, 2020	R.Fukuda	M.Muro	H.Ikari
0	T20042	July 30, 2020	R.Fukuda	M.Muro	Y.Shimada

1. Purpose

To evaluate the performance of CABLINE-CA IIF connector in accordance with PRS-2418.

2. Specimen

(1) CABLINE-CA IIF SHELL ASS'Y （Part No. 20856-0**T-01）

(2) CABLINE-CA II RECE. ASS'Y （Part No. 20682-0**E-02※）

3. Test Sequence

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

4. Result

Results are indicated in Tables 2-1 to 2-3 and Graphs 1 to 18.
For the details of the testing conditions and requirements, refer to product specification no. PRS-2418.
The “n” in the tables show the number of measurement point

5. Conclusion

All the specimens met the requirements of PRS-2418.

Table1. 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		
D. W. Voltage						3,7	3,7		
Temp. Rise	1								
Mating Force		1,5							
Un-mating Force		3,7							
Durability		4							
Vibration			2						
Shock			4						
Thermal Shock				2					
High Temperature Life					2				
Humidity (Steady State)						4			
Humidity (Cycling)							4		
Salt Water Spray								2	
H_2S Gas									2
Sample QTY.	5	5	5	5	5	5	5	5	5

※The number of group is test sequence.

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 Temperature Rising	0.3A/Contact 12.0A/Connector			ΔT=30℃MAX.	5	5	ΔT=24.6℃ MAX					OK
B Group Durability	Contact Resistance (mΩ)	Initial		60mΩMAX.	5	200	14.898	25.33	4.59	4.106	27.216	OK
		After 30th Testing		ΔR=40mΩ MAX.			-0.925	7.61	-9.73	3.367	9.176	OK
	GND Resistance (mΩ)	Initial		60mΩMAX.	5	5	7.844	8.42	7.36	0.349	8.891	OK
		After 30th Testing		ΔR=40mΩ MAX.			-0.161	0.50	-0.46	0.289	0.706	OK
	Mating Force (N)	40P	Initial	18.00N MAX.	5	5	4.170	4.49	4.00	0.176	4.698	OK
			After 30th Testing	18.00N MAX.			3.091	3.35	2.89	0.149	3.538	OK
		50P	Initial	22.50N MAX.	5	5	8.724	9.54	8.29	0.443	10.053	OK
			After 30th Testing	22.50N MAX.	5	5	6.406	6.90	5.90	0.317	7.357	OK
	Un-mating Force (N)	40P	Initial	1.92N MIN.	5	5	2.967	3.25	2.79	0.162	2.481	OK
			After 30th Testing	1.92N MIN.			2.952	3.25	2.57	0.232	2.256	OK
		50P	Initial	2.40N MIN.	5	5	5.076	5.78	4.42	0.542	3.450	OK
			After 30th Testing	2.40N MIN.	5	5	5.478	6.22	4.73	0.514	3.936	OK
C Group Vibration ↓ Shock	Contact Resistance (mΩ)	Initial		60mΩMAX.	5	200	15.409	23.38	6.84	3.756	26.677	OK
		After Vibration		ΔR=40mΩ MAX.			-3.574	4.98	-8.47	2.933	5.225	OK
		After Shock		ΔR=40mΩ MAX.			-0.847	5.77	-7.90	3.074	8.376	OK
	GND Resistance (mΩ)	Initial		60mΩMAX.	5	5	7.465	8.25	6.93	0.355	8.355	OK
		After Vibration		ΔR=40mΩ MAX.			-0.087	0.64	-0.72	0.441	1.236	OK
		After Shock		ΔR=40mΩ MAX.			0.090	0.62	-0.49	0.369	1.197	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

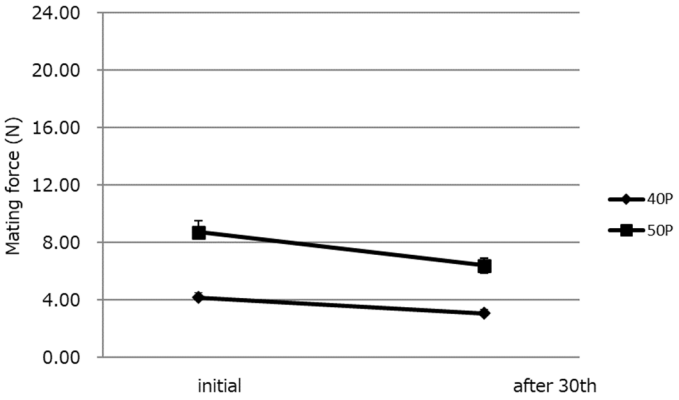
*The Temperature Rising Test is a result when applied ratings current (0.3A/contact) between the neighboring contacts for 40pos. (With the whole connector 12.0A.)

Table.2-2 Test result

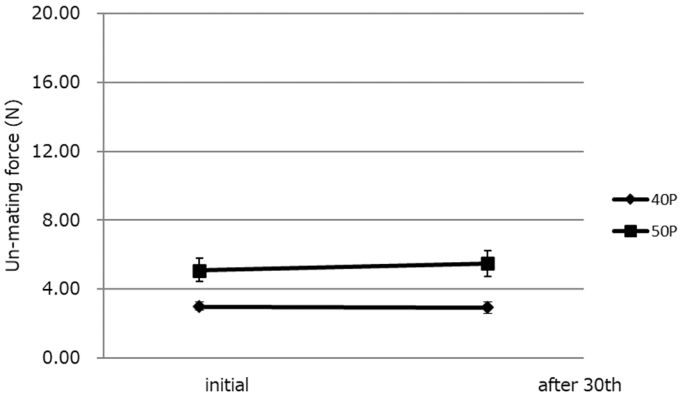
Test Item	Contents of Measurement		Specifications	Set	N	Data					Judge
						AVE.	MAX.	MIN.	S	X±3s	
D Group Thermal Shock	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	200	14.742	22.84	5.55	3.477	25.173	OK
		After Testing	ΔR=40mΩ MAX.			-1.124	4.65	-6.81	2.029	4.963	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	7.810	8.49	7.37	0.364	8.902	OK
		After Testing	ΔR=40mΩ MAX.			0.166	0.93	-0.50	0.426	1.444	OK
E Group High Temperature Life	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	200	14.484	22.97	5.32	3.066	23.682	OK
		After Testing	ΔR=40mΩ MAX.			-0.994	6.44	-6.98	2.517	6.557	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	7.843	8.65	7.22	0.415	9.088	OK
		After Testing	ΔR=40mΩ MAX.			-0.096	0.67	-1.47	0.603	1.713	OK
F Group Humidity (Steady State)	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	200	14.674	22.05	6.79	2.839	23.353	OK
		After Testing	ΔR=40mΩ MAX.			-0.672	6.53	-6.11	2.777	7.659	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	8.192	8.98	7.19	0.543	9.821	OK
		After Testing	ΔR=40mΩ MAX.			-0.237	0.99	-1.29	0.707	1.884	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	100	1.18×10^{6} MΩ					OK
		After Testing	500MΩMIN.			1.67×10^{5} MΩ					OK
	D. W. Voltage	Initial	No abnormalities such as creeping discharge, flashover, insulator breakdown occur.	5	100	No Abnormality					OK
		After Testing				No Abnormality					OK

Table.2-3 Test result

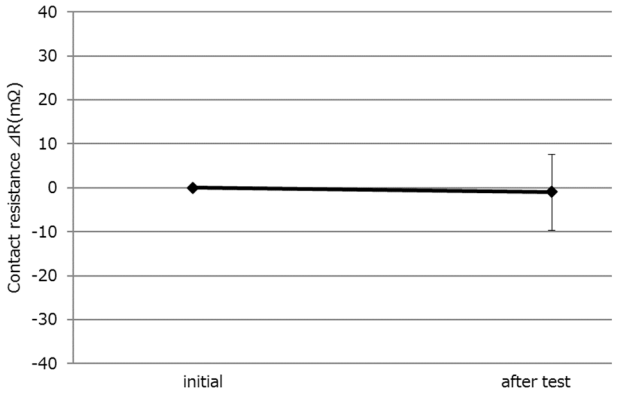
Test Item	Contents of Measurement	Specifications		Set	N	Data					Judge
						AVE.	MAX.	MIN.	S	X±3s	
G Group Humidity (Cycling)	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	200	15.609	23.85	6.18	3.247	25.350	OK
		After Testing	ΔR=40mΩ MAX.			2.663	7.18	-4.46	2.549	10.310	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	7.481	8.42	6.11	0.739	9.698	OK
		After Testing	ΔR=40mΩ MAX.			0.459	1.92	-0.93	0.843	2.988	OK
	Insulation Resistance (MΩ)	Initial	1000MΩMIN.	5	100	1.29×10^{6} MΩ					OK
		After Testing	500MΩMIN.			7.92×10^{5} MΩ					OK
	D. W. Voltage	Initial	No abnormalities such as creeping discharge, flashover, insulator breakdown occur.	5	100	No Abnormality					OK
		After Testing				No Abnormality					OK
H Group Salt Water Spray	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	200	15.315	24.60	7.02	3.587	26.076	OK
		After Testing	ΔR=40mΩ MAX.			-2.479	4.33	-9.71	2.805	5.936	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	7.959	8.96	6.14	0.805	10.374	OK
		After Testing	ΔR=40mΩ MAX.			-0.245	0.15	-0.65	0.253	0.514	OK
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No Abnormality					OK
J Group Gas(H_2S)	Contact Resistance (mΩ)	Initial	60mΩMAX.	5	200	15.012	27.28	4.08	4.364	28.104	OK
		After testing	ΔR=40mΩ MAX.			-2.361	4.83	-7.83	2.851	6.192	OK
	GND Resistance (mΩ)	Initial	60mΩMAX.	5	5	7.755	8.98	7.06	0.576	9.483	OK
		After Testing	ΔR=40mΩ MAX.			-0.048	1.51	-1.40	0.915	2.697	OK
	Appearance	After Testing	No abnormality adversely affecting the performance shall occur.	5	5	No Abnormality					OK



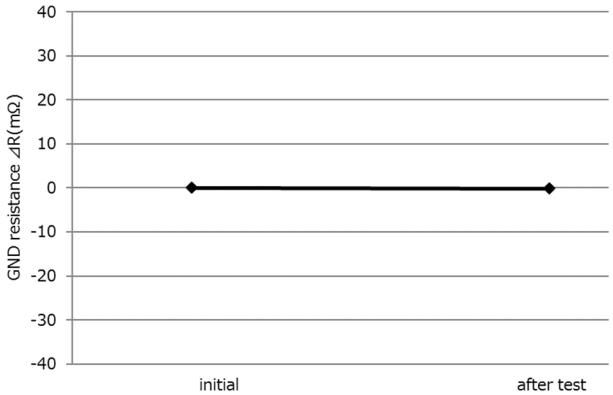
Graph 1. A change of mating force (B Group: Durability)



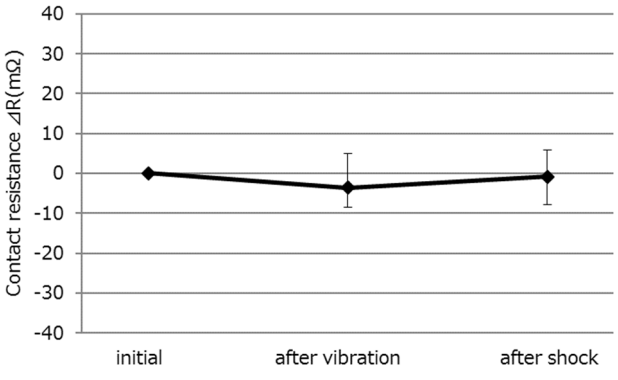
Graph 2. A change of un-mating force (B Group: Durability)



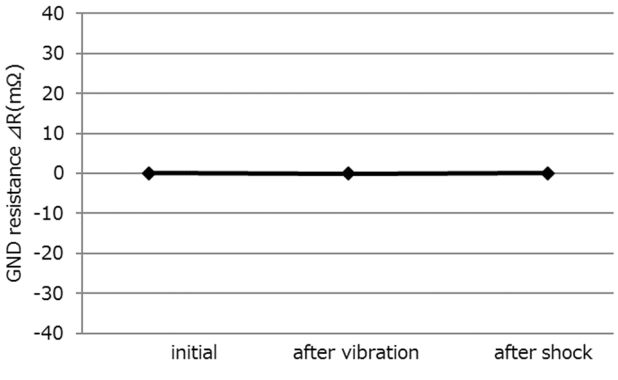
Graph 3. A change of contact resistance (B Group: Durability)



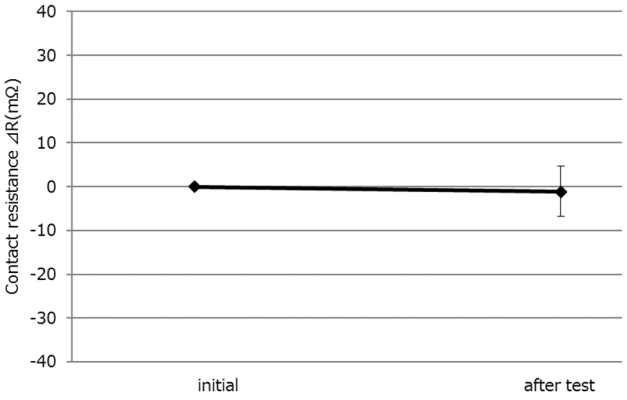
Graph 4. A change of GND resistance (B Group: Durability)



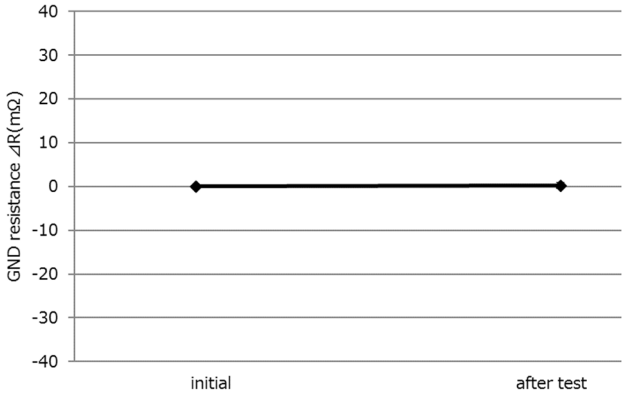
Graph 5. A change of contact resistance (C Group: Vibration/Shock)



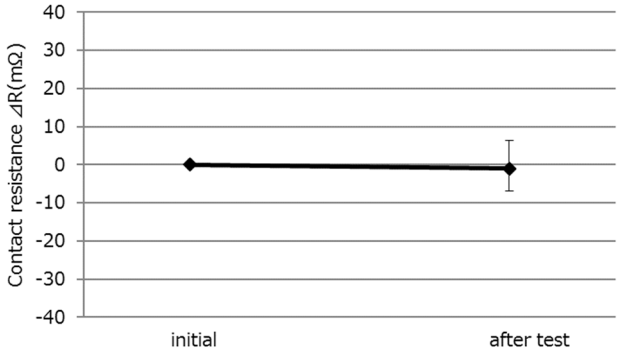
Graph 6. A change of GND resistance (C Group: Vibration/Shock)



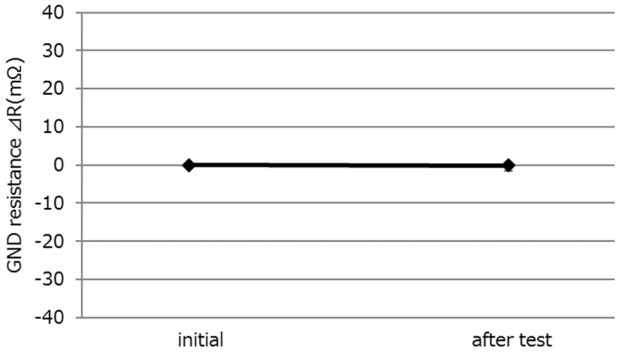
Graph 7. A change of contact resistance (D Group: Thermal shock)



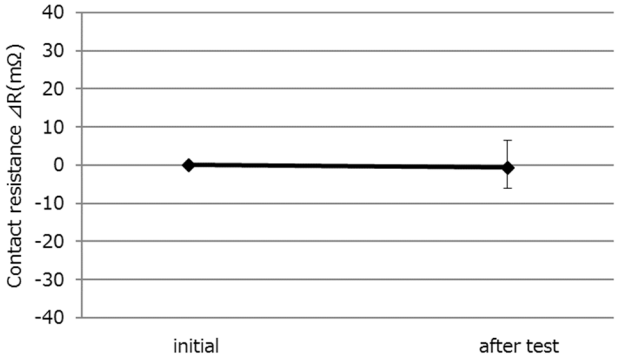
Graph 8. A change of GND resistance (D Group: Thermal shock)



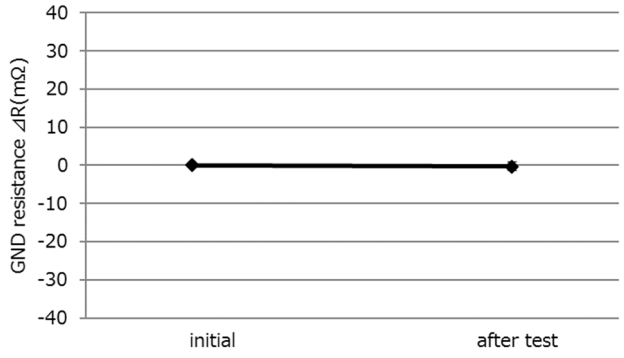
Graph 9. A change of contact resistance (E Group: High temp.life)



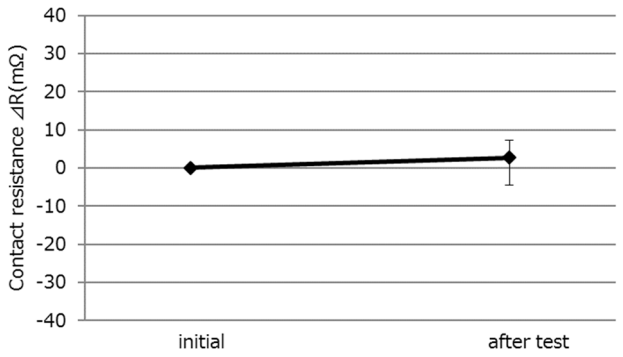
Graph 10. A change of GND resistance (E Group: High temp.life)



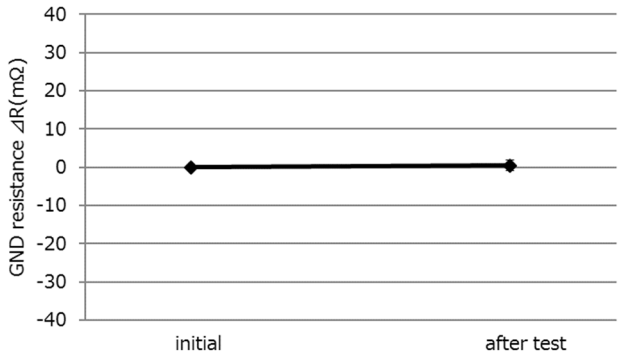
Graph 11. A change of contact resistance
(F Group: Humidity(Steady state))



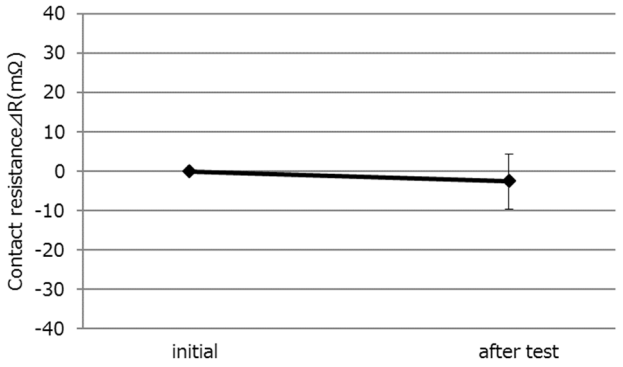
Graph12. A change of GND resistance
(F Group: Humidity(Steady state))



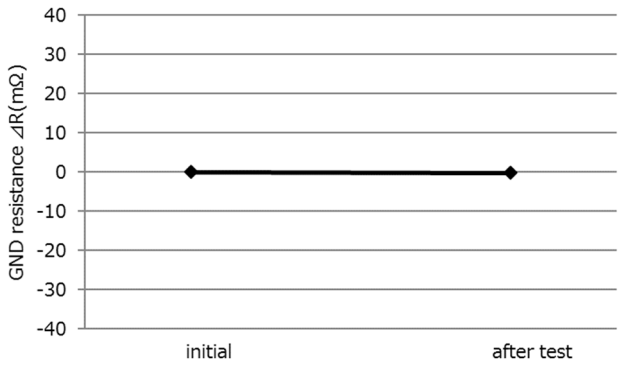
Graph 13. A change of contact resistance
(G Group: Humidity(Cycling))



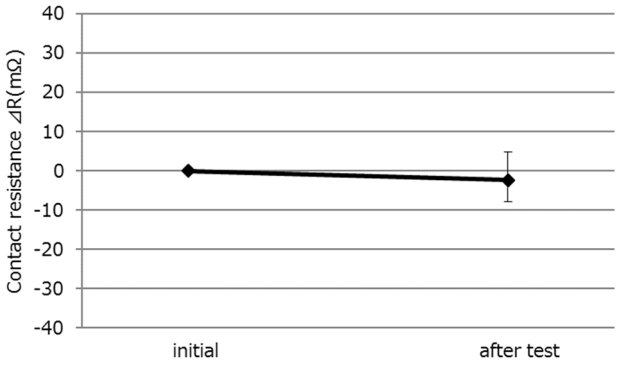
Graph 14. A change of GND resistance
(G Group: Humidity(Cycling))



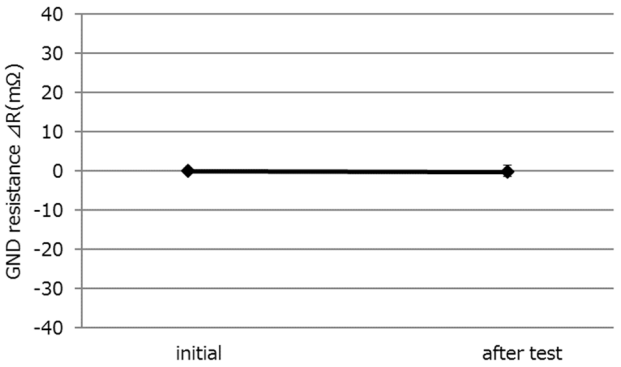
Graph 15. A change of contact resistance (H Group: Salt spray)



Graph 16. A change of GND resistance (H Group: Salt spray)



Graph 17. A change of contact resistance (J Group: Gas(H2S))



Graph 18. A change of GND resistance (J Group: Gas(H2S))