

CABLINE[®]-UA II Connector

Part No. Plug: 20496-***-** Receptacle: 20498-***E-**

Test Report

Product Specification no. PRS-1469

8	T18009	January 29, 2018	R.Hoshino	K.Tanaka	M.Takemoto
7	T17122	July 28, 2017	R.Hoshino	K.Tanaka	M.Takemoto
6	T15107	August 6, 2015	R.Nishiyama	K.Narita	T.Takano
5	T14139	October 23, 2014	S.Kawamura	K.Narita	T.Takano
Rev.	ECN	Date	Prepared by	Checked by	Approved by

CABLINE®-UA II Connector Test Report

1. Purpose

CABLINE-UA II コネクタの性能を PRS-1469 に基づいて評価する。

To evaluate the performance of CABLINE-UA II Connector in accordance with PRS-1469.

2. Specimen

(1) CABLINE-UA II PLUG CABLE ASS'Y (Part No. 20496-***-**))

CABLINE-UA II PLUG HOUSING ASS'Y (Part No. 20497-***T-**))

CABLINE-UA II PLUG METAL COVER (Part No. 2679-0**-*0)

(2) CABLINE-UA II RECEPTACLE ASS'Y (Part No. 20498-***E-**))

3. Test Sequence

全ての評価は表 1 の試験順序に従って行った。

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

4. Result

表 2-1~2-4、グラフ 1~18 参照。試験条件の詳細は PRS-1469 参照。n 数は測定データを意味する。

See Table 2-1 to 2-4, Graph 1 to 18. For the details of the testing conditions and requirements, see PRS-1469.

The "n" in the tables show the number of measurement points.

5. Conclusion

全ての資料が製品規格 (PRS-1469) の必要条件を満足した。

All the specimens met the requirements of PRS-1469.

表 1 試験順序と試料数 / Test Sequence and Sample Quantity

試験項目 Test Item	グループ / Group											
	A	B	C	D	E	F	G	H	J	K	L	M
接触抵抗 Contact Resistance	2,6		1,3,5	1,5	1,3	1,5	1,5,7	1,3	1,3			
絶縁抵抗 Insulation Resistance				2,6		2,6	2,8					
耐電圧 D. W. Voltage				3,7		3,7	3,9					
温度上昇 Temperature rising												1
挿入力 Mating Force	1,5											
抜去力 Un-mating Force	3,7											
耐久性 Durability	4						4 (10cycles)					
端子保持力 Contact Retention Force		1										
ケーブル保持力 Cable Retention Force	8											
耐振動性 Vibration			2									
耐衝撃性 Shock			4									
熱衝撃 Thermal Shock				4								
高温寿命 High Temperature Life					2							
湿度 (定常状態) Humidity (Steady State)						4						
湿度 (サイクリング) Humidity (Cycling)							6					
塩水噴霧 Salt Water Spray								2				
硫化水素ガス H2S Gas									2			
半田付け性 Solder ability										1		
半田耐熱性 Soldering Heat Resistance											1	
試料数 Specimen Quantity.	5 pcs.	25 pos.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	15 pcs.	15 pcs.	5 pcs.

※グループ表中の番号は、試験順序を示す。 / Numbers indicate sequence in which tests are performed.

表 2-1. 試験結果 (Table 2-1 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Sample q'ty	n	データ Data				判定 Judgement	
						AVE.	MAX.	MIN.	s		
A Group 耐久性 Durability ↓ ケーブル 保持力 Cable Retention Force	接触抵抗(mΩ) Contact Resistance	初期 Initial	AWG#44 1,080mΩMAX.	5	250	872.67	900.1	846.9	12.30	Pass	
		20 回挿抜後 After 20Cycles	AWG#44 ΔR=40mΩMAX.			2.22	9.7	-7.6	4.52	Pass	
	Ground 抵抗(mΩ) Ground Resistance	初期 Initial	100mΩMAX.	5	-	20.43	20.8	19.5	-	Pass	
		20 回挿抜後 After 20Cycles	ΔR=40mΩMAX.			-0.32	3.8	-8.3	-	Pass	
	26P	挿入力 Mating Force(N)	初期 Initial	28.0N MAX.	5	-	21.24	22.5	19.7	-	Pass
			20 回挿抜後 After 20Cycles	28.0N MAX.			9.99	10.6	9.4	-	Pass
		抜去力 Un-mating Force(N)	初期 Initial	3.0N MIN.	5	-	11.70	12.1	11.2	-	Pass
			20 回挿抜後 After 20Cycles	3.0N MIN.			5.64	6.0	5.1	-	Pass
	ケーブル保持力(N) Cable Retention Force		15.0N MIN.	5	-	36.58	37.1	36.2	-	Pass	
	32P	挿入力 Mating Force(N)	初期 Initial	34.5N MAX.	5	-	23.41	24.5	21.3	-	Pass
			20 回挿抜後 After 20Cycles	34.5N MAX.			13.32	13.9	12.8	-	Pass
		抜去力 Un-mating Force(N)	初期 Initial	3.0N MIN.	5	-	11.41	11.7	11.2	-	Pass
			20 回挿抜後 After 20Cycles	3.0N MIN.			5.91	6.2	5.4	-	Pass
	ケーブル保持力(N) Cable Retention Force		15.0N MIN.	5	-	33.40	34.7	32.4	-	Pass	
	40P	挿入力 Mating Force(N)	初期 Initial	40.0N MAX.	5	-	30.83	32.6	29.6	-	Pass
			20 回挿抜後 After 20Cycles	40.0N MAX.			17.38	18.9	15.0	-	Pass
		抜去力 Un-mating Force(N)	初期 Initial	3.0N MIN.	5	-	10.41	10.9	9.9	-	Pass
			20 回挿抜後 After 20Cycles	3.0N MIN.			5.48	5.8	5.1	-	Pass
	ケーブル保持力(N) Cable Retention Force		15.0N MIN.	5	-	33.40	34.7	32.4	-	Pass	
	50P	挿入力 Mating Force(N)	初期 Initial	50.0N MAX.	5	-	39.58	42.6	35.7	-	Pass
20 回挿抜後 After 20Cycles			50.0N MAX.	19.20			20.2	17.6	-	Pass	
抜去力 Un-mating Force(N)		初期 Initial	3.0N MIN.	5	-	12.43	13.1	11.5	-	Pass	
		20 回挿抜後 After 20Cycles	3.0N MIN.			6.52	7.1	5.8	-	Pass	
ケーブル保持力(N) Cable Retention Force		15.0N MIN.	5	-	31.83	33.5	30.3	-	Pass		
B Group 端子保持力 Contact Retention Force	PLUG 端子保持力(N) Plug Contact Retention Force		0.6N MIN	-	25	1.8N の力を加えても、端子の抜け無し It does not pull out even if it applies the power of 1.8N to a terminal.				Pass	
	RECEPTACLE 端子保持力(N) Receptacle Contact Retention Force		0.2N MIN	-	25	0.667	0.80	0.54	-	Pass	

表 2-2. 試験結果 (Table 2-2 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Sample q'ty	n	データ Data				判定 Judgement
						AVE.	MAX.	MIN.	s	
C Group 耐振動性 Vibration ↓ 耐衝撃 Shock	接触抵抗(mΩ) Contact Resistance	初期 Initial	AWG#44 1,080mΩMAX	5	250	843.48	912.2	808.0	12.59	Pass
		振動後 After Vibration	AWG#44 ΔR=40mΩMAX			6.02	10.1	-4.4	3.07	Pass
		衝撃後 After Shock	AWG#44 ΔR=40mΩMAX			5.37	10.4	-7.2	3.55	Pass
	Ground 抵抗(mΩ) Ground Resistance	初期 Initial	100mΩMAX	5	-	24.49	27.2	21.7	-	Pass
		振動後 After Vibration	ΔR=40mΩMAX			0.92	3.5	-0.5	-	Pass
		衝撃後 After Shock	ΔR=40mΩMAX			0.52	3.2	-0.7	-	Pass
	電気の瞬断 Electrical Discontinuity	振動/衝撃試験中 During Vibration/Shock	1μsec. MAX	5	-	瞬断無し No abnormality				Pass
外観 Appearance	振動/衝撃試験後 After Vibration/Shock	異常無き事 No abnormality	5	-	異常無し No abnormality				Pass	
D Group 熱衝撃 Thermal Shock	接触抵抗(mΩ) Contact Resistance	初期 Initial	AWG#44 1,080mΩMAX	5	250	850.95	893.7	822.6	12.87	Pass
		試験後 After Testing	AWG#44 ΔR=40mΩMax			4.87	9.7	-4.4	3.35	Pass
	Ground 抵抗(mΩ) Ground Resistance	初期 Initial	100mΩMAX	5	-	24.74	27.4	22.0	-	Pass
		試験後 After Testing	ΔR=40mΩMA X			0.50	1.1	0.4	-	Pass
	絶縁抵抗(MΩ) Insulation Resistance	初期 Initial	100MΩMIN.	5	-	6.8×10 ⁵ MΩ MIN.				Pass
		試験後 After Testing	100MΩMIN.			3.8×10 ⁴ MΩ MIN.				Pass
耐電圧 D.W.Voltage		異常無き事 No abnormality	5	-	異常無し No abnormality				Pass	

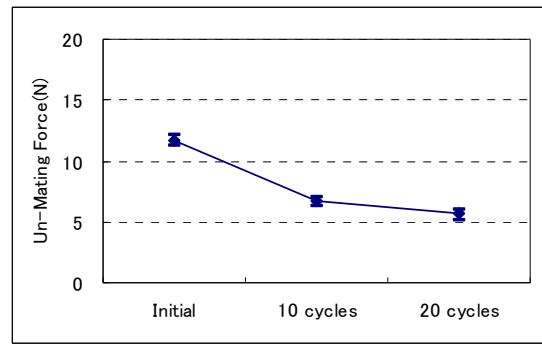
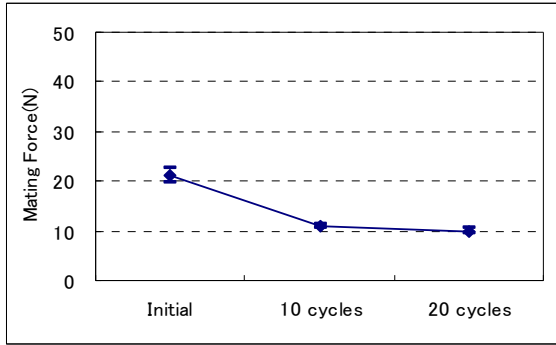
表 2-3. 試験結果 (Table.2-3 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Sample q'ty	n	データ Data				判定 Judgement
						AVE.	MAX.	MIN.	s	
E Group 耐熱性 High Temperature Life	接触抵抗(mΩ) Contact Resistance	初期 Initial	AWG#44 1,080mΩMAX	5	250	837.37	871.6	800.2	18.04	Pass
		試験後 After Testing	AWG#44 ΔR=40mΩMAX			0.92	8.8	-4.7	3.68	Pass
	Ground 抵抗(mΩ) Ground Resistance	初期 Initial	100mΩMAX	5	-	22.38	25.0	18.9	-	Pass
		試験後 After Testing	ΔR=40mΩMAX			0.71	2.7	-1.6	-	Pass
F Group 耐湿性 (定常) Humidity (Steady State)	接触抵抗(mΩ) Contact Resistance	初期 Initial	AWG#44 1,080mΩMAX	5	250	839.73	859.1	816.3	8.87	Pass
		試験後 After Testing	AWG#44 ΔR=40mΩMAX			4.59	9.7	-3.6	2.68	Pass
	Ground 抵抗(mΩ) Ground Resistance	初期 Initial	100mΩMAX	5	-	22.37	24.6	19.5	-	Pass
		試験後 After Testing	ΔR=40mΩMAX			0.32	2.0	-0.9	-	Pass
	絶縁抵抗(MΩ) Insulation Resistance	初期 Initial	100MΩMIN.	5	-	6.8×10 ⁵ MΩ MIN.				Pass
		試験後 After Testing	100MΩMIN.			3.0×10 ⁴ MΩ MIN.				Pass
耐電圧 D.W.Voltage		異常無き事 No abnormality		5	-	異常無し No abnormality				Pass
G Group 温湿度サイクル Humidity Cycling	接触抵抗(mΩ) Contact Resistance	初期 Initial	AWG#44 1,080mΩMAX	5	250	836.42	853.8	816.1	7.06	Pass
		試験後 After Testing	AWG#44 ΔR=40mΩMAX			4.73	9.2	-3.2	2.31	Pass
	Ground 抵抗(mΩ) Ground Resistance	初期 Initial	100mΩMAX	5	-	22.37	24.6	19.5	-	Pass
		試験後 After Testing	ΔR=40mΩMAX			0.32	2.1	-1.0	-	Pass

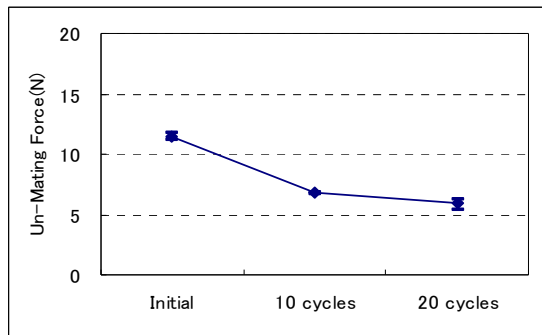
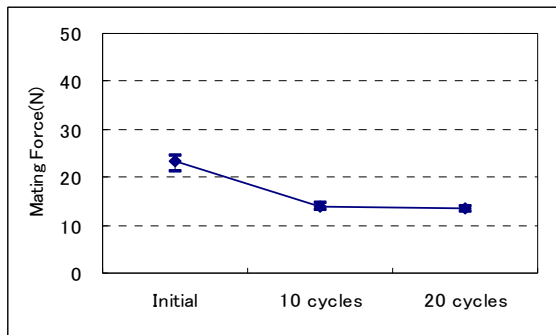
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表 2-4. 試験結果(Table 2-4 Test result)

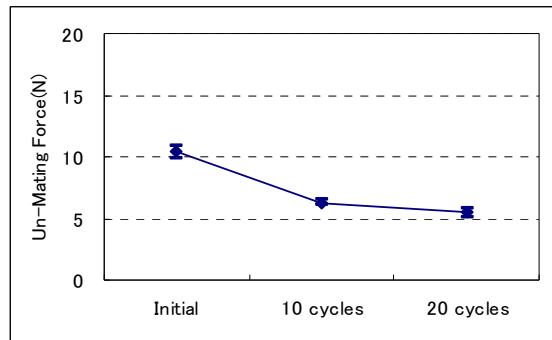
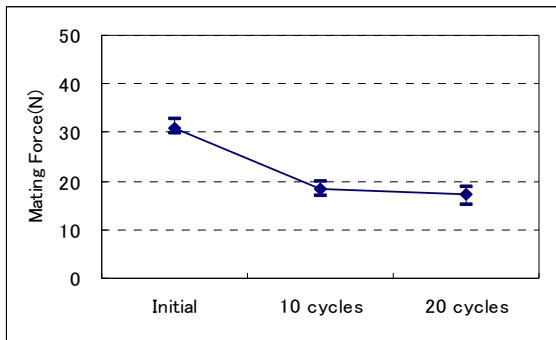
試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Sample q'ty	n	データ Data				判定 Judgement
						AVE.	MAX.	MIN.	s	
H Group 塩水噴霧 Salt Water Spray	接触抵抗(mΩ) Contact Resistance	初期 Initial	AWG#44 1,080mΩMAX	5	250	852.25	878.6	827.9	8.54	Pass
		試験後 After Testing	AWG#44 ΔR=40mΩMAX			5.90	9.7	1.1	1.93	Pass
	Ground 抵抗(mΩ) Ground Resistance	初期 Initial	100mΩMAX	5	-	24.00	26.9	21.0	-	Pass
		試験後 After Testing	ΔR=40mΩMAX			0.12	0.8	-0.8	-	Pass
J Group 耐硫化ガス性 (H ₂ S) Gas(H ₂ S)	接触抵抗(mΩ) Contact Resistance	初期 Initial	AWG#44 1,080mΩMAX	5	250	861.65	918.9	811.7	25.02	Pass
		試験後 After Testing	AWG#44 ΔR=40mΩMAX			5.48	9.9	-6.5	4.56	Pass
	Ground 抵抗(mΩ) Ground Resistance	初期 Initial	100mΩMAX	5	-	25.30	28.2	22.3	-	Pass
		試験後 After Testing	ΔR=40mΩMAX			-0.18	0.5	-1.1	-	Pass
K Group 半田付け性 Solder ability	外観 Appearance		95%以上濡れる事 More than 95% wet	15	-	95%以上濡れる Wet 95% MIN.				Pass
L Group 半田耐熱性 リフロー Soldering Heat Resistance	外観 Appearance		異常無き事 No abnormality	15	-	異常無し No abnormality				Pass
M Group 温度上昇 Temperature Rising	AWG#46:0.15A		ΔT=30°C MAX.	5	-	ΔT= 26.7°C MAX				Pass
AWG#44:0.19A		ΔT= 27.3°C MAX								
AWG#42:0.20A		ΔT= 25.7°C MAX								



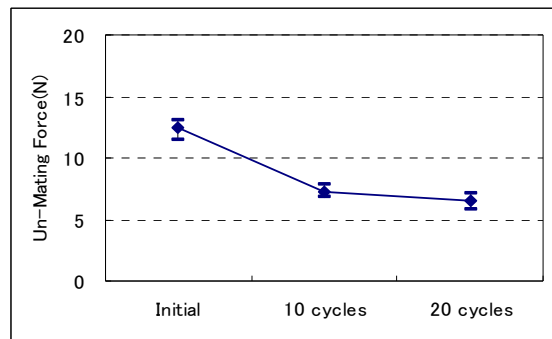
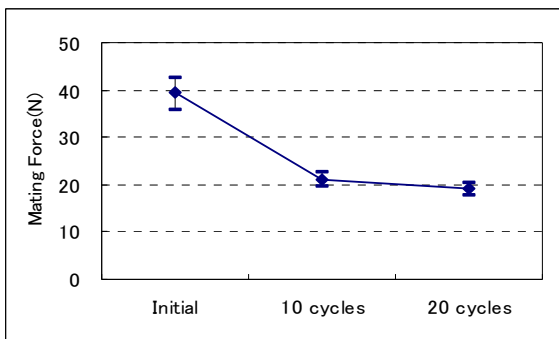
26P



32P



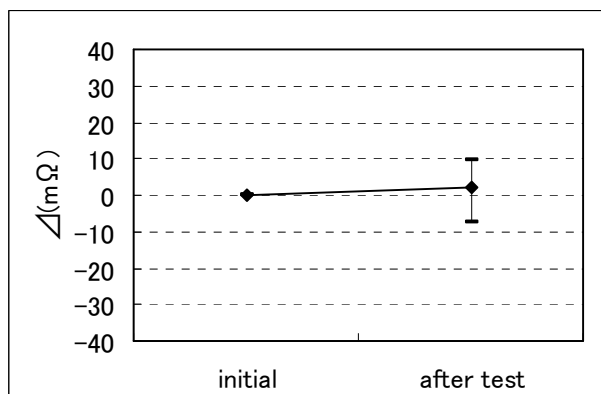
40P



50P

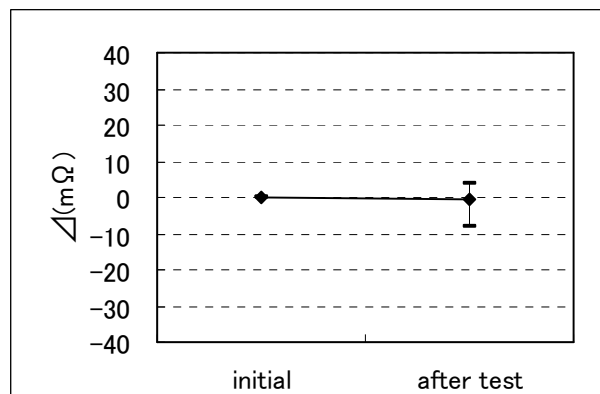
Graph 1 挿入力の変化 (A Group : 耐久性)
A change of mating force (A Group: Durability)

Graph 2 抜去力の変化 (A Group : 耐久性)
A change of un-mating force (A Group: Durability)



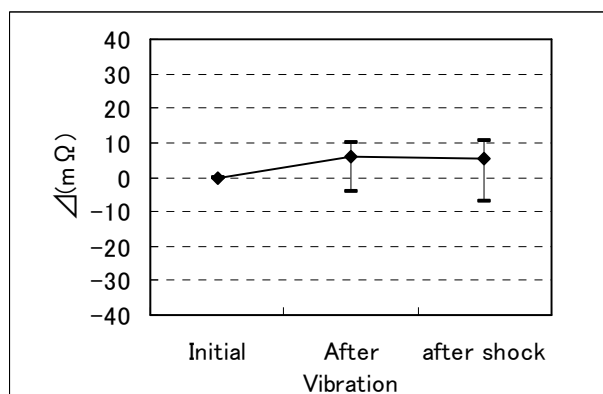
Graph 3 接触抵抗値の変化 (A Group : 耐久性)

A change of contact resistance (A Group: Durability)



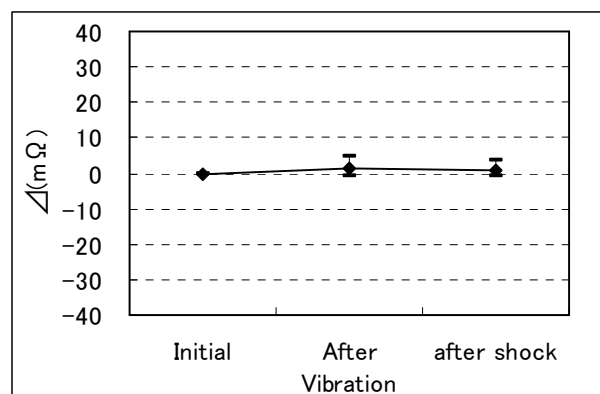
Graph 4 Ground 抵抗値の変化 (A Group : 耐久性)

A change of ground resistance (A Group: Durability)



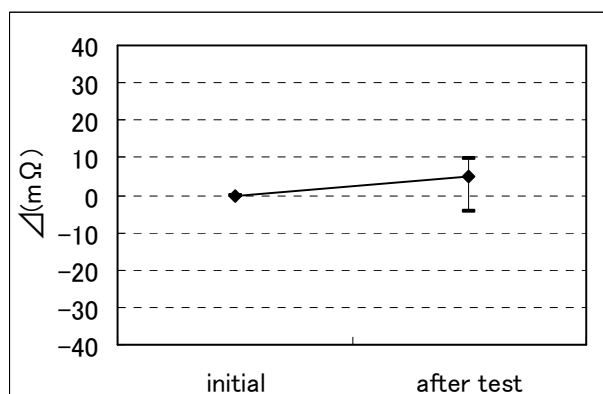
Graph 5 接触抵抗値の変化 (C Group : 耐振動性・耐衝撃性)

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



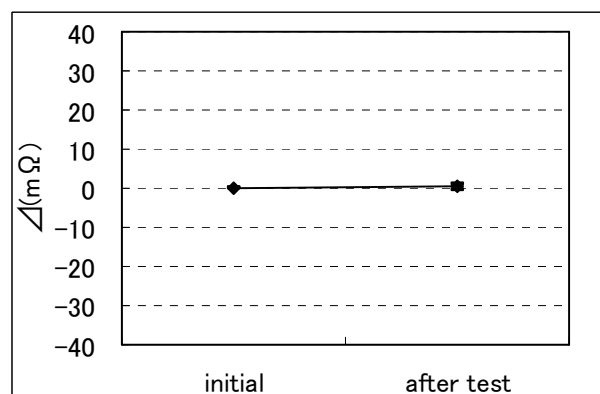
Graph 6 Ground 抵抗値の変化 (C Group : 耐振動性・耐衝撃性)

A change of ground resistance (C Group: Vibration/Shock)



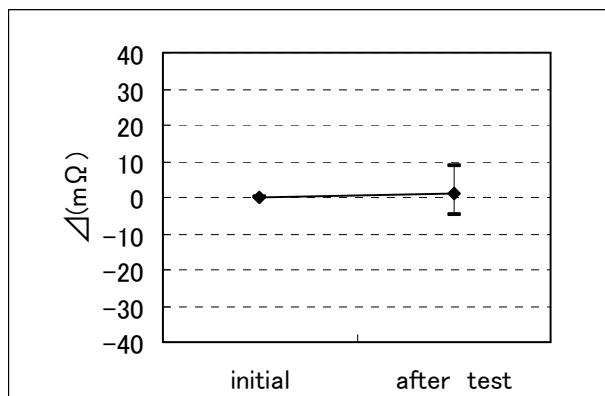
Graph 7 接触抵抗値の変化 (D Group : 熱衝撃)

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



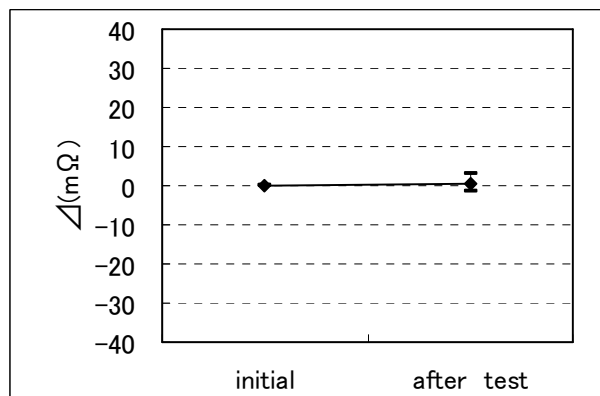
Graph 8 Ground 抵抗値の変化 (D Group : 熱衝撃)

A change of ground resistance (D Group: Thermal shock)



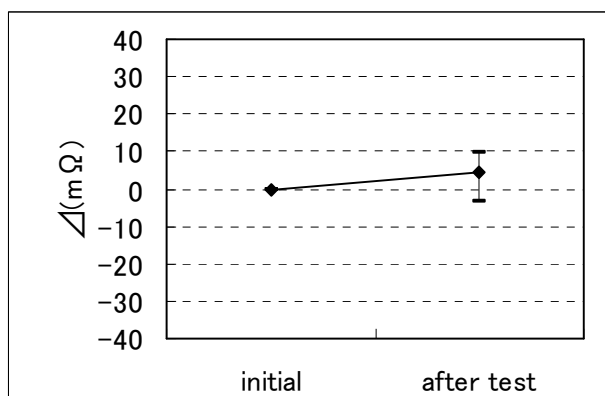
Graph 9 接触抵抗値の変化 (E Group : 耐熱性)

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



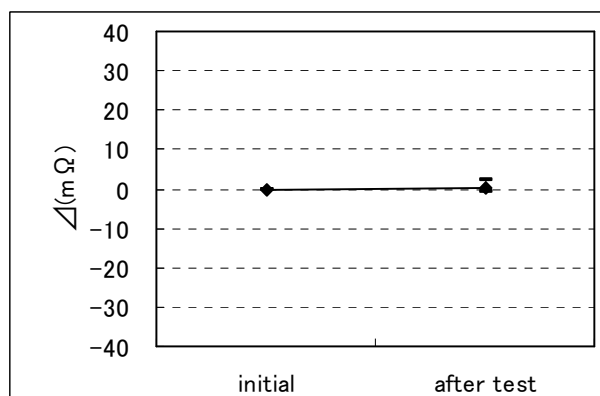
Graph 10 Ground 抵抗値の変化 (E Group : 耐熱性)

A change of ground resistance (E Group: High temperature life)



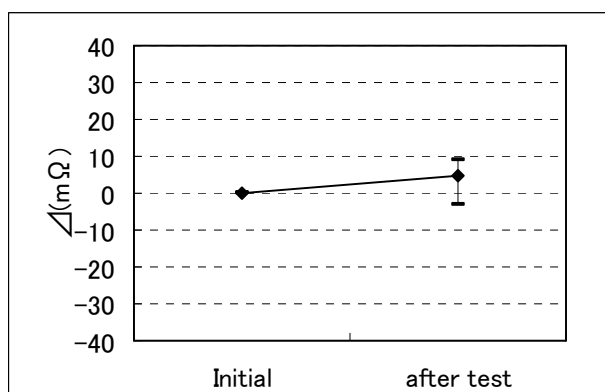
Graph 11 接触抵抗値の変化(F Group : 湿度(定常状態))

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



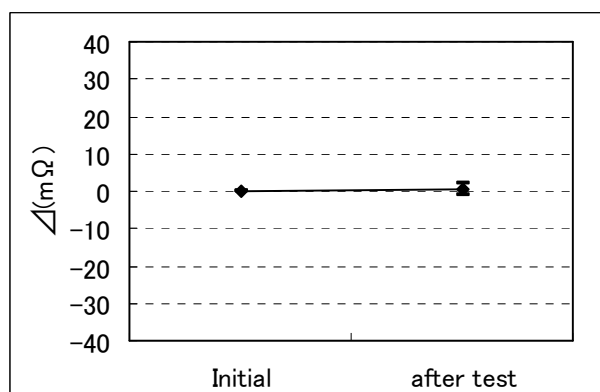
Graph 12 Ground 抵抗値の変化 (F Group : 湿度(定常状態))

A change of ground resistance (F Group: Humidity (Steady state))



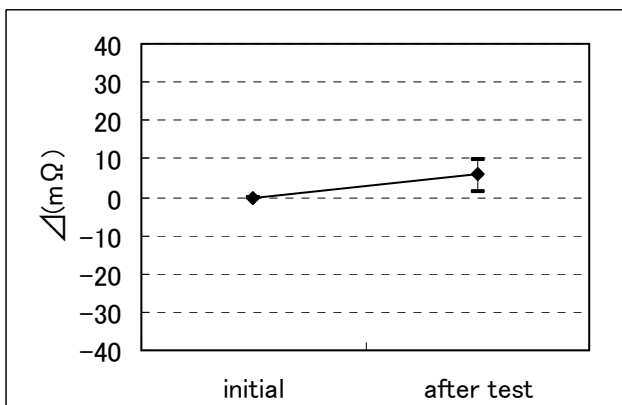
Graph 13 接触抵抗値の変化 (G Group : 湿度(サイクリング))

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



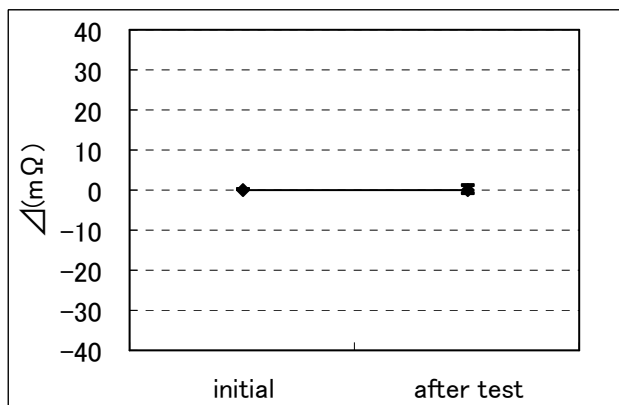
Graph 14 Ground 抵抗値の変化 (G Group : 湿度(サイクリング))

A change of ground resistance (G Group: Humidity (Cycling))



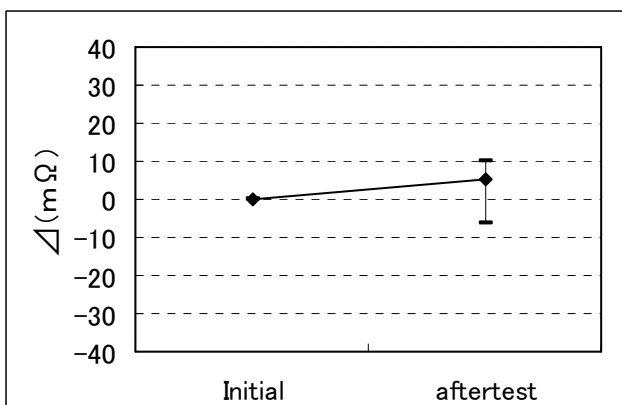
Graph 15. 接触抵抗値の変化 (H Group : 塩水噴霧)

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



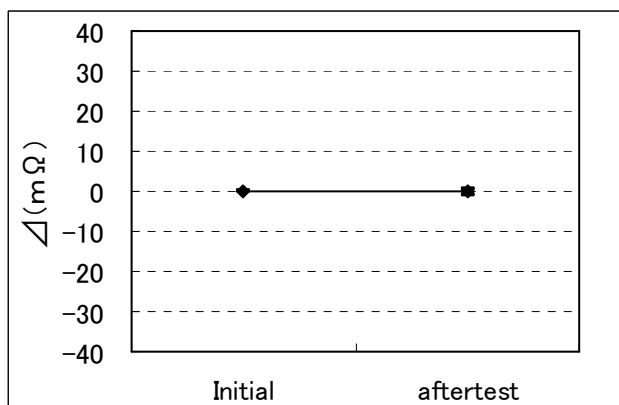
Graph 16. Ground 抵抗値の変化 (H Group : 塩水噴霧)

A change of ground resistance (H Group: Salt water spray)



Graph 17 接触抵抗値の変化 (J Group : ガス(H₂S))

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



Graph 18 Ground 抵抗値の変化 (J Group : ガス(H₂S))

A change of ground resistance (J Group: Gas (H₂S))