AP-10 Power Terminal

Part No. Plug: 3531-0001-00T, 3539-0001-45T

Receptacle: 3532-0001-00T

Test Report

Product Specification no.PRS-2616

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Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. Purpose

基板対基板の電源端子 AP-10 コネクタの性能を PRS-2616 に基づいて評価する。
To evaluate the performance of AP-10Connector in accordance with PRS-2616.

2. Specimen

(1) AP-10 PLUG （Part No. 3531-0001-00T, 3539-0001-45T）
(2) AP-10 RECEPTACLE （Part No. 3532-0001-00T）

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 3-1～3-3、グラフ 1～14 参照。試験条件の詳細は PRS-2616 参照。n 数は測定データを意味する。
See Table 3-1 to 3-3, Graph 1 to 14. For the details of the testing conditions and requirements, see PRS-2616.
The “n” in the tables show the number of measurement points.

5. Conclusion

全ての資料が製品規格（PRS-2616）の必要条件を満足した。
All the specimens met the requirements of PRS-2616.

Table 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	N	P
接触抵抗 Contact Resistance	2,5		1,3	1,3		1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3
温度上昇 Temperature rising		1												
挿入力 Mating Force	1,4													
耐久性 Durability	3													
耐振動性 Vibration			2											
耐衝撃性 Shock				2										
電極固着性試験 Electrode fastness test					1									
高温寿命 High Temperature Life						2								
高温動作 High Temperature Life （Energization ）							2							
低温寿命 Low Temperature Life								2						
低温動作 Low Temperature Life (Energization)									2					
高温高湿放置 High Temperature and humidity										2				
高温高湿動作 High Temperature and humidity (Energization)											2			
温度サイクル Temperature cycling												2		
温湿度サイクル Temperature and humidity cycling													2	
ガス腐食(SO$_2$) SO$_2$ Gas														2
試料数 Specimen Quantity.	5 pcs	5 pcs	5 pcs	5 pcs	5 pcs	5 pcs	5 pcs	5 pcs	5 pcs	5 Pcs	5 pcs	5 pcs	5 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.

Table 2　試験順序と試料数／Test Sequence and Sample Quantity

試験項目 Test Item	グループ／Group			
	Q	R	S	T
半田付け性 Solder ability	1			
半田耐熱性(リフロー) Soldering Heat Resistance(Reflow)		1		
半田耐熱性(こて付け法) Soldering Heat Resistance(Soldering iron)			1	
半田接合寿命 Solder junction life				1
試料数 Specimen Quantity	5 pcs	5 pcs	5 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.

Table 3-1 試験結果/Test Result

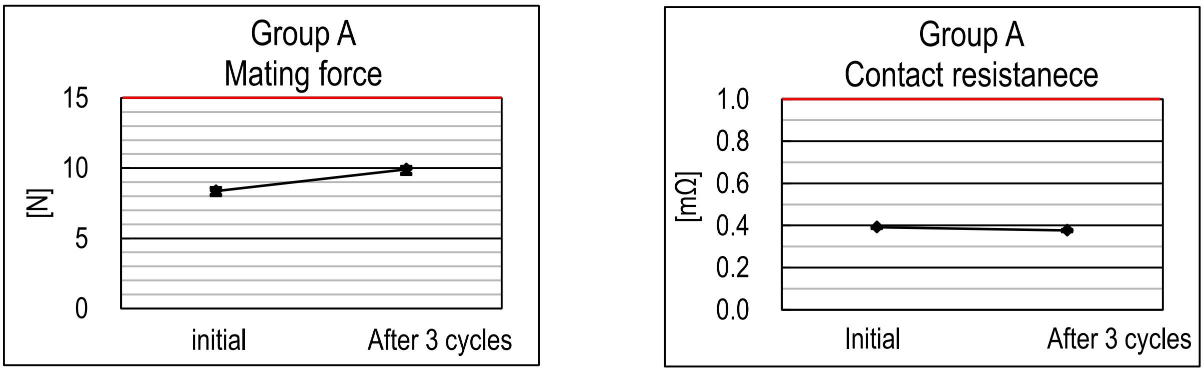
Group	試験項目／Test items	測定項目／Measurements	合格基準 Pass criteria	試料数 n	単位 Unit	平均 AVE.	最大 MAX.	最小 MIN.	判定 Judgement
A	挿入力／Mating force								
		Initial	15N MAX.	5	N	8.38	8.6	8.1	Pass
		After 3cycles				9.93	10.1	9.6	Pass
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.3927	0.395	0.389	Pass
		After 3cycles				0.3777	0.380	0.374	Pass
B	温度上昇／Temperature rising								
		Initial	⊿T15℃ MAX.	5	℃	3.340	3.60	2.90	Pass
C	耐振動性／Vibration								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.3880	0.400	0.377	Pass
		After testing				0.3822	0.395	0.376	Pass
	電流瞬断／Electrical discontinuity								
		During test	No discontinuity greater than 1μs.	5	-	瞬断なし／No discontinity			Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
D	耐衝撃性／Shock								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.3956	0.408	0.384	Pass
		After testing				0.3896	0.412	0.376	Pass
	電流瞬断／Electrical discontinuity								
		During test	No discontinuity greater than 1μs.	5	-	瞬断なし／No discontinity			Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
E	電極固着性試験／Electorode fastness test								
	外観／Appearance								
		合格基準：機能を損なう異常が無き事。 Pass criteria: No abnormality adversely affecting the performance shall not occur.							
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
F	高温寿命／High Temperature Life								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.4144	0.434	0.399	Pass
		After testing				0.4762	0.515	0.453	Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
G	高温動作／High Temperature Life (Energization)								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.4130	0.448	0.391	Pass
		After testing				0.4550	0.493	0.429	Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass

Table 3-2 試験結果/Test Result

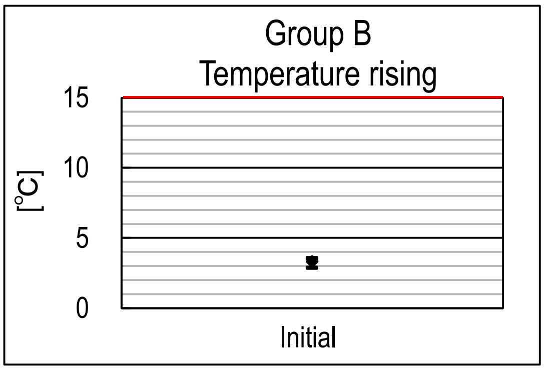
Group	試験項目／Test items		合格基準	試料数	単位	平均	最大	最小	判定
		測定項目／Measurements	Pass criteria	n	Unit	AVE.	MAX.	MIN.	Judgement
H	低温寿命／Low Temperature Life								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.4120	0.420	0.400	Pass
		After testing				0.4070	0.414	0.395	Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
J	低温動作／Low Temperature Life (Energization)								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.4020	0.420	0.390	Pass
		After testing				0.3897	0.396	0.378	Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
K	高温高湿放置／High Temperature and humidity								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.4048	0.417	0.391	Pass
		After testing		5		0.3900	0.406	0.371	Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
L	高温高湿放置動作／High Temperature and humidity (Energization)								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.4203	0.437	0.407	Pass
		After testing				0.4091	0.432	0.391	Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
M	温度サイクル／Temperature cycling								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.4136	0.432	0.398	Pass
		After testing				0.4176	0.457	0.400	Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass

Table 3-3 試験結果/Test Result

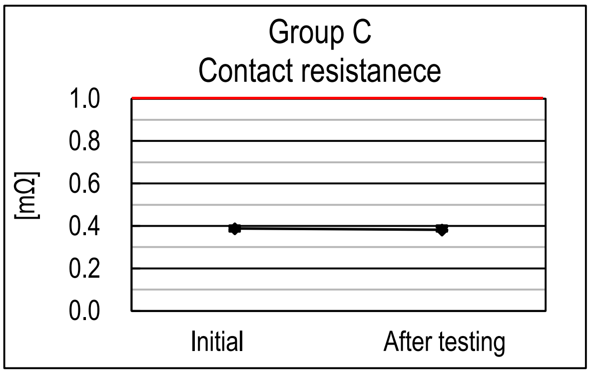
Group	試験項目／Test items	測定項目／Measurements	合格基準 Pass criteria	試料数 n	単位 Unit	平均 AVE.	最大 MAX.	最小 MIN.	判定 Judgement
N	温湿度サイクル／Temperature and humidity cycling								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.4155	0.434	0.400	Pass
		After testing				0.4000	0.426	0.389	Pass
	外観／Appearance								
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
P	ガス腐食(SO2)／SO2 Gas								
	接触抵抗／Contact resistance								
		Initial	1mΩ MAX.	5	mΩ	0.4172	0.420	0.407	Pass
		After testing				0.3904	0.403	0.381	Pass
	外観／Appearance								
		Initial	No abnormality	5	-	異常なし／No abnormality			Pass
		After testing	No abnormality			異常なし／No abnormality			Pass
Q	半田付け性／Solder ability								
	外観／Appearance								
		合格基準：機能を損なう異常が無き事。 Pass criteria: No abnormality adversely affecting the performance shall not occur.							
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
R	半田耐熱性(リフロー)／Soldering Heat Resistance(Reflow)								
		合格基準：機能を損なう異常が無き事。 Pass criteria: No abnormality adversely affecting the performance shall not occur.							
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
S	半田耐熱性(こて付け法)／Soldering Heat Resistance(Soldering iron)								
		合格基準：機能を損なう異常が無き事。 Pass criteria: No abnormality adversely affecting the performance shall not occur.							
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass
T	半田接合寿命／Solder junction life								
		合格基準：試験後に導通が確認され、機能を損なう異常が無き事。 Pass criteria: Electrical continuity is confirmed after the test,and no abnormality adversely affecting the performance shall not occur.							
		After testing	No abnormality	5	-	異常なし／No abnormality			Pass



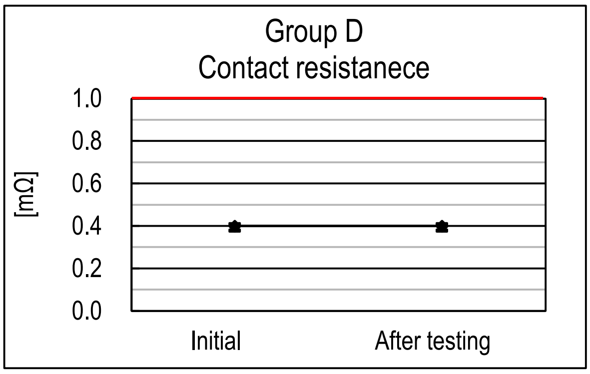
(Graph 1) Group A: Durability



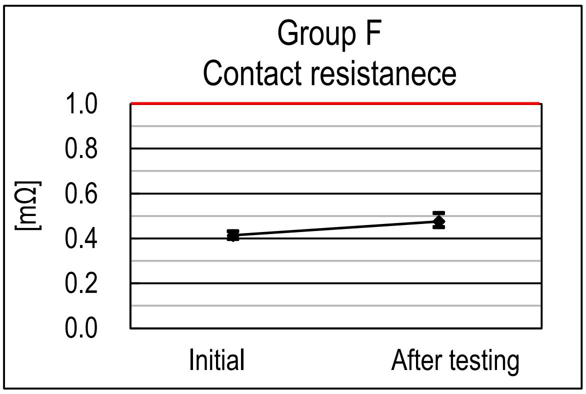
(Graph 2) Group B: Temperature rising



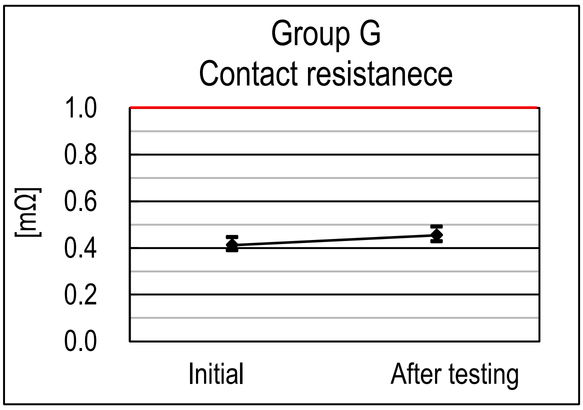
(Graph 3) Group C: Vibration



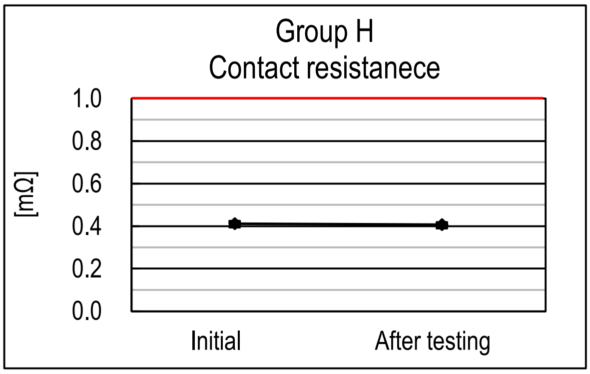
(Graph 4) Group D: Shock



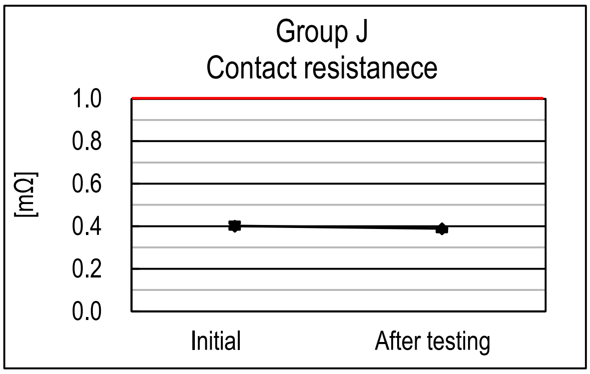
(Graph 5) Group F: High Temperature Life



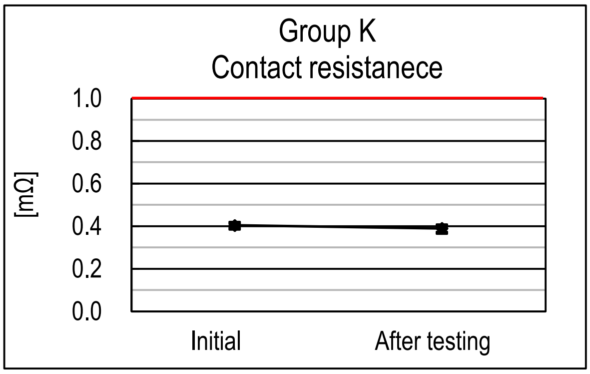
(Graph 6) Group G: High Temperature Life (Energization)



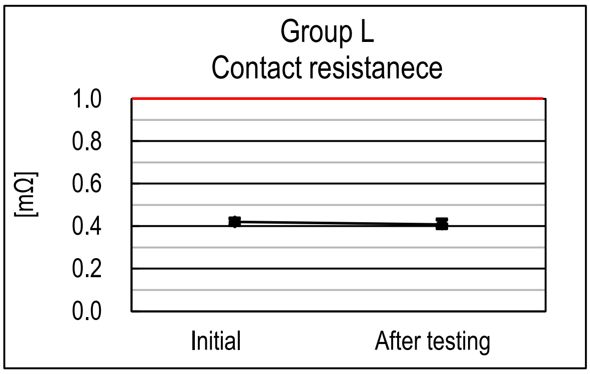
(Graph 7) Group H: Low Temperature Life



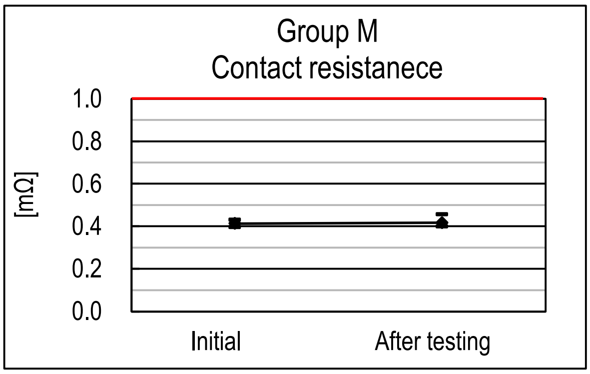
(Graph 8) Group J: Low Temperature Life (Energization)



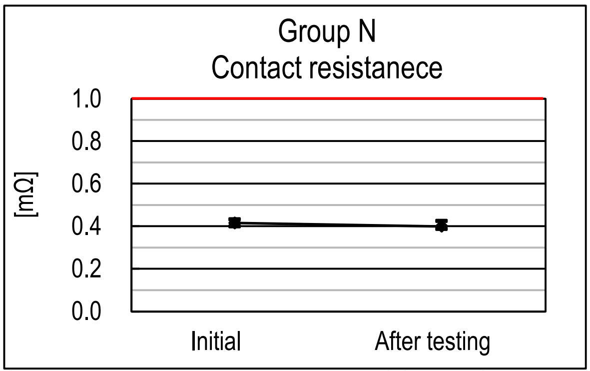
(Graph 9) Group K:High Temperature and humidity



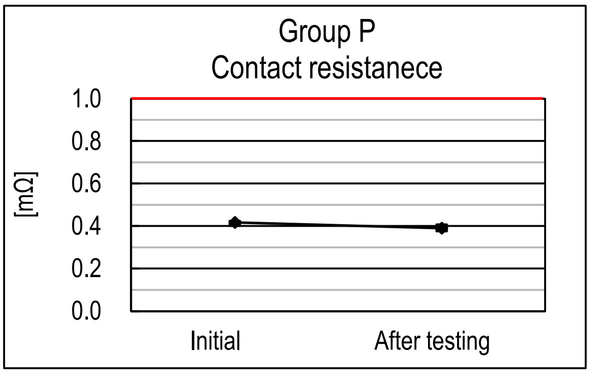
(Graph 10) Group L:High Temperature and humidity (Energization)



(Graph 11) Group M: Temperature cycling



(Graph 12) Group N:Temperature and humidity cycling



(Graph 13) Group P: SO_2 Gas