

## **AP-10**

Part No. Plug: 3531-\*\*01-00T, 3539-\*\*01-00\*

Receptacle: 3532-\*\*01-00T

# Test Report

Product Specification no.PRS-2616

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3	T23063	December 18, 2023	T. Ito	S. Kamada	Y. Hashimoto
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Rev.	ECN	Date	Prepared by	Checked by	Approved by
Confidentia	Confidential C		I-PEX Inc.		QKE-DFFDE07-07 REV.10

## AP-10 Test Report

#### 1. Purpose

To evaluate the performance of AP-10Connector in accordance with PRS-2616.

#### 2. Specimen

(1) AP-10 PLUG (Part No. 3531-\*\*01-00T, 3539-\*\*01-00\*)

(2) AP-10 RECEPTACLE (Part No. 3532-\*\*01-00T)

#### 3. Test Sequence

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

#### 4. Result

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

All the specimens met the requirements of PRS-2616.

Table 1 Test Sequence and Sample Quantity

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Test Item	Α	В	С	D	Е	F	G	Н	J	K	L	М	N	Р
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
Temperature rising		1												
Mating Force/Unmating Force	1,4													
Durability	3													
Vibration			2											
Shock				2										
Electrode fastness test					1									
High Temperature Life						2								
High Temperature Life (Energization)							2							
Low Temperature Life								2						
Low Temperature Life (Energization)									2					
High Temperature and humidity										2				
High Temperature and humidity (Energization)											2			
Temperature cycling												2		
Temperature and humidity cycling													2	
SO₂ Gas														2
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

<sup>\*</sup>Numbers indicate sequence in which tests are performed.

Table 2 Test Sequence and Sample Quantity

Test Item	Group					
lest item	Q	R	S	Т		
Solder ability	1					
Soldering Heat Resistance (Reflow)		1				
Soldering Heat Resistance (Soldering iron)			1			
Solder junction life				1		
Specimen Quantity	5 pcs	5 pcs	5 pcs	5 pcs		

<sup>\*</sup>Numbers indicate sequence in which tests are performed.

### Table 3-1 /Test Result

	_		1								
Group	Test i							1.00.002.00			
		Measurements	Pass criteria	n	Unit	AVE.	MAX.	MIN.	Judgement		
A	Matin	g force				_		_			
		Initial	15N MAX.	5	N	8.38	8.6	8.1	Pass		
		After 3cycles	ISIN MAX.	,	I N	9.93	10.1	9.6	Pass		
	Unma	ating force									
		Initial	450.040	_		6.08	6.5	5.6	Pass		
		After 3cycles	15N MAX.	5	N	9.45	10.2	8.5	Pass		
	Conta	act resistance									
		Initial				0.3927	0.395	0.389	Pass		
		After 3cycles	1mΩ MAX.	5	mΩ	0.3777	0.380	0.374	Pass		
		riter befores	l			0.0777	0.500	0.07	. 033		
В	Temp	perature rising									
		Initial	⊿T15℃ MAX.	5	℃	8.200	8.46	7.72	Pass		
С	Vibra	tion									
-		act resistance									
	Conta	Initial				0.3880	0.400	0.377	Pass		
			1mΩ MAX.	5	mΩ	0.3822	0.395				
	Floct	After testing rical discontinuity				0.3022	0.393	0.376	Pass		
	Liecti	rical discontinuity	No discontinuity								
		During test	greater than 1µs.	5	-	No discon	tinity		Pass		
	Appe	arance	greater than 193.								
		After testing	No abnormality	5	_	No abnorr	mality		Pass		
		Arter testing	110 abriormancy			nto abilion	noncy		. 033		
D	Shoc	k									
	Contact resistance										
		Initial	1mΩ MAX.	5	mΩ	0.3956	0.408	0.384	Pass		
		After testing	Tillse Place.	J	11132	0.3896	0.412	0.376	Pass		
	Elect	rical discontinuity									
		During test	No discontinuity	5	_	No discon	tinity		Pass		
			greater than 1µs.			no discon	cirricy		. 033		
	Appe	arance									
		After testing	No abnormality	5	-	No abnorr	mality		Pass		
E	Elect	orode fastness test									
	Appe	arance									
		Pass criteria: No ab	normality adversely		g the per			occur.			
		After testing	No abnormality	5	-	No abnorr	mality		Pass		
F	High	Temperature Life									
		act resistance									
		Initial				0.4144	0.434	0.399	Pass		
			1mΩ MAX.	5	mΩ						
		After testing				0.4762	0.515	0.453	Pass		
	Appe	arance									
		After testing	No abnormality	5	-	No abnorr	mality		Pass		
G	High	Temperature Life (En	ergization )								
		act resistance	3.22								
		Initial			Г	0.3970	0.414	0.383	Pass		
			1mΩ MAX.	5	mΩ		<b>†</b>	<b>†</b>			
		After testing				0.5646	0.778	0.483	Pass		
	Appe	arance									
	I	After testing	No abnormality	5	-	No abnorr	mality		Pass		

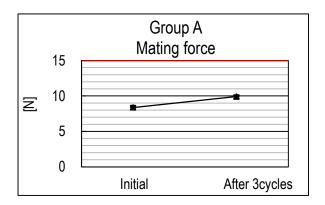
### Table 3-2 Test Result

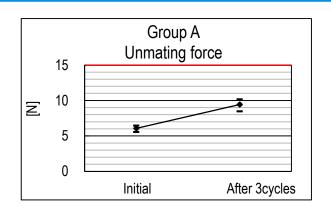
		Tuble 5-2	10011100	<del>/u.c</del>							
Group	Test items										
	Measurements	Pass criteria	n	Unit	AVE.	MAX.	MIN.	Judgement			
Н	Low Temperature Life										
	Contact resistance										
	Initial	- 1mΩ MAX.	5	mΩ	0.4120	0.420	0.400	Pass			
	After testing	THIS MAX.	3	11152	0.4070	0.414	0.395	Pass			
	Appearance										
	After testing	No abnormality	5	-	No abnorr	mality		Pass			
J	Low Temperature Life (Ene	ergization )									
	Contact resistance										
	Initial	1mΩ MAX.	5	mΩ	0.4022	0.440	0.376	Pass			
	After testing	TITISZ MAX.	3	11152	0.4212	0.440	0.378	Pass			
	Appearance										
	After testing	No abnormality	5	-	No abnorr	mality		Pass			
K	High Temperature and humidity										
	Contact resistance										
	Initial	- 1mΩ MAX.	5	0	0.4048	0.417	0.391	Pass			
	After testing	- IMSZ MAX.	5	mΩ	0.3900	0.406	0.371	Pass			
	Appearance										
	After testing	No abnormality	5	-	No abnormality			Pass			
L	High Temperature and hur	midity (Energization)									
	Contact resistance										
	Initial	1mΩ MAX.	5	mΩ	0.4230	0.472	0.379	Pass			
	After testing	THIS MAX.	5	11152	0.4096	0.416	0.406	Pass			
	Appearance										
	After testing	No abnormality	5	-	No abnorr	mality		Pass			
М	Temperature cycling										
	Contact resistance										
	Initial	1mO MAY	5		0.4136	0.432	0.398	Pass			
	After testing	- 1mΩ MAX.	5	mΩ	0.4176	0.457	0.400	Pass			
	Appearance										
	After testing	No abnormality	5	-	No abnorr	mality		Pass			

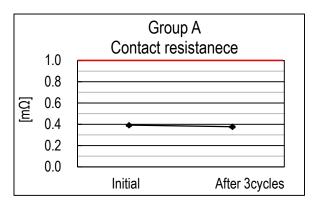
#### Table 3-3 Test Result

Group	Test i	tems				Τ			
G. 64p	i csc i	Measurements	Pass criteria	n	Unit	AVE.	MAX.	MIN.	Judgement
N	Temp	perature and humidity							
		ect resistance	-,9						
		Initial		_	_	0.3980	0.433	0.388	Pass
		After testing	1mΩ MAX.	5	mΩ	0.4038	0.434	0.392	Pass
	Appea	arance							
		After testing	No abnormality	5	-	No abnorr	mality		Pass
Р	SO2 (	Gas							
	Conta	ect resistance							
		Initial	4 6 1141	_	_	0.4172	0.420	0.407	Pass
		After testing	1mΩ MAX.	5	mΩ	0.3904	0.403	0.381	Pass
	Appea	arance				•	•	•	•
		Initial	No abnormality	5		No abnorr	mality		Pass
		After testing	No abnormality	n	•	No abnorr	mality		Pass
Q	Solde	er ability							
	Appea	arance							
		Pass criteria: No abi	normality adversely	affecting	the per	rformance	shall not	occur.	
		After testing	No abnormality	5	-	No abnorr	mality		Pass
R	Colda	ring Heat Resistance(F	Onflow)						'
K	Solde		normality adversely	affecting	the no	rformanco	chall not	occur	
		After testing	No abnormality	5	i tile per	No abnorr		occur.	Pass
	<u> </u>	Arter testing	NO abnormality	3		NO abriori	Halley		P055
S	Solde	ring Heat Resistance(S							
-		Description of the later of the		afforting	the ne	rformance	shall not	occur.	
5		Pass criteria: No abi	normality adversely	arrecting	y and per				
		After testing	No abnormality	5	-	No abnorr			Pass
T	Solde		, ,		-				Pass
	Solde	After testing	, ,	5	-	No abnorr			Pass
	Solde	After testing r junction life Pass criteria: Electri	No abnormality	5 firmed a	fter the	No abnorr	mality		Pass

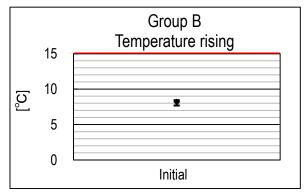
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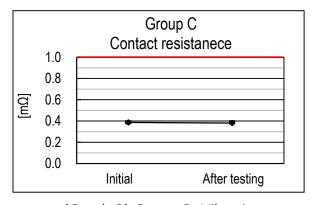




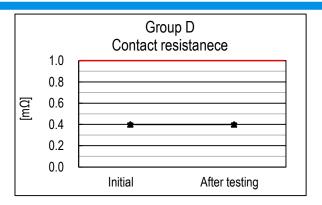
(Graph 1) Group A: Durability



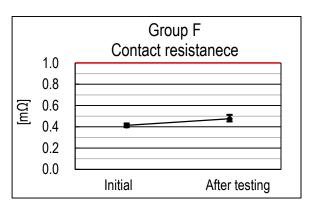
(Graph 2) Group B: Temperature rising



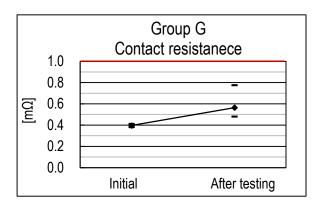
(Graph 3) Group C: Vibration



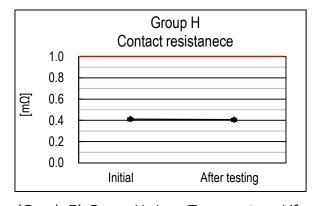
(Graph 4) Group D: Shock



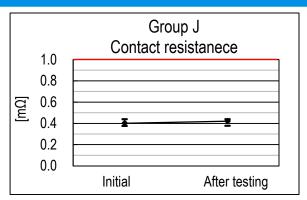
(Graph 5) Group F: High Temperature Life



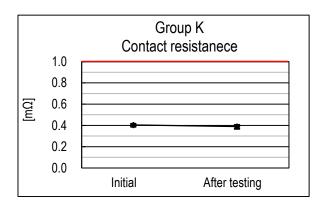
(Graph 6) Group F: High Temperature Life (Energization)



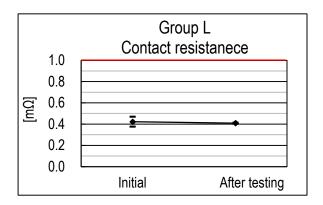
(Graph 7) Group H: Low Temperature Life



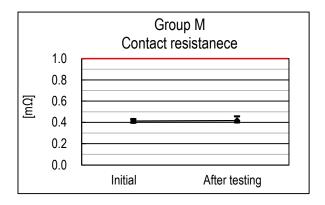
(Graph 8) Group J: Low Temperature Life (Energization)



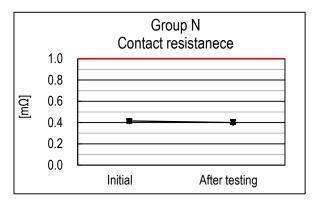
(Graph 9) Group K: High Temperature and humidity



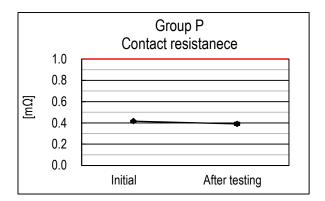
(Graph 10) Group L: Higt Temperature and humidity (Energization)



(Graph 11) Group M: Temperature cycling



(Graph 12) Group N: Temperature and humidity cycling



(Graph 13) Group P: SO<sub>2</sub> Gas