



TEST REPORT		Issue No. R21-0328	Rev. 1
Customer:		Issue date: June 4, 2021	
Product Name: PH connector		Revision date: June 21, 2021	

Purpose	As for adding the resin material manufacturer of PH connector housing, the performance comparative evaluation between the current product and additional product shall be conducted.		
	Resin material maker	Resin Part No.	
	Current product	Toray Industries, Inc.	CM3004V0
	Additional product	KINGFA	△ PA66-RNG00
Conclusion	As a result of comparative evaluation, it is judged that the performance of the additional product is equivalent to one of the current products.		

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1. SPECIMEN

Part Name		Part Number	Remak
Contact		SPH-002T-P0.5S	—
Housing		PHR-*	Current product Additional product
Header	Top entry type	B*B-PH-K-S (LF)(SN)	—
	Side entry type	S*B-PH-K-S (LF)(SN)	—

Note₁: Number of circuits is indicated in *.

2. TEST ITEMS

Test items	
4.1 Appearance	
4.2 Mechanical Performance Test	4.2.1 Insertion Force & Withdrawal Force 4.2.2 Contact Retention Force
4.3 Electrical Performance Test	4.3.1 Insulation Resistance 4.3.2 Dielectric Withstanding Voltage

3. TEST CONDITION

- 1) Unless otherwise specified, tests shall be conducted under the following ambient conditions specified in JIS C 60068-1 (IEC 60068-1) [Basic Environmental Testing Procedures General and Guidance].

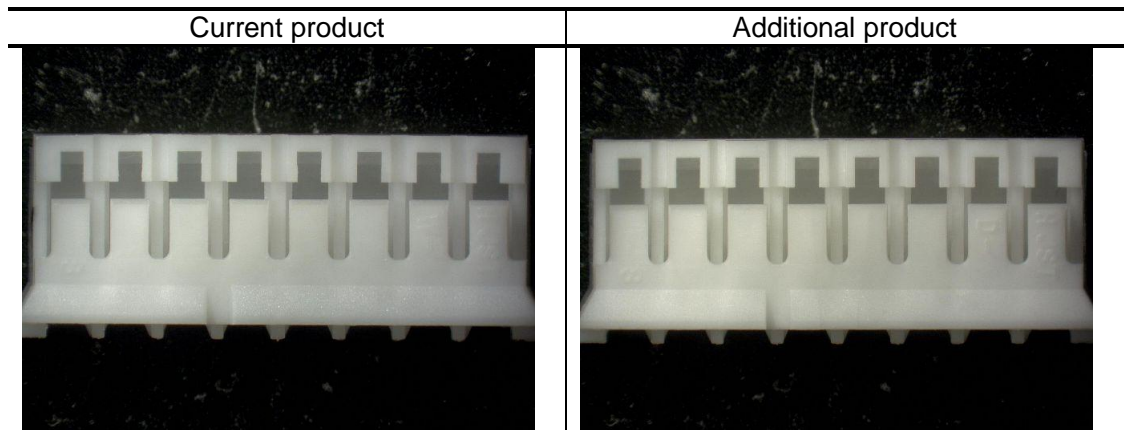
Temperature: 15 to 35°C
Relative humidity: 25 to 75%

4. TEST METHODS & TEST RESULTS

4.1 Appearance

Test method: Visual inspection shall be conducted to check any defect such as crack, deformation, discoloration which may affect the performances specified in this specification.

Test result: No abnormalities are found.



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4. TEST METHOD AND RESULT

4.2 Mechanical Performance Test

4.2.1 Insertion Force (I.F.) & Withdrawal Force (W.F.)

Test method: The housing with the crimped contacts and the header shall be mated and unmated on the mating axis. Initial insertion and withdrawal forces, and withdrawal force at 50th shall be measured. (Testing speed: 1 to 5 mm/sec.)

Test result: UNIT: N

No. of circuits		Items	Measured values			Requirements
			Ave.	Max.	Min.	
3	Current product	Initial I.F.	18.7	22.4	16.2	29.4 max.
		Initial W.F.	14.7	16.4	13.3	7.8 min.
		W.F. at 50th	9.6	10.3	9.1	5.9 min.
	Additional product	Initial I.F.	16.7	18.0	15.2	29.4 max.
		Initial W.F.	13.7	15.2	12.8	7.8 min.
		W.F. at 50th	10.8	12.8	9.6	5.9 min.
8	Current product	Initial I.F.	40.3	43.8	37.6	53.9 max.
		Initial W.F.	28.4	30.9	26.3	13.7 min.
		W.F. at 50th	26.7	28.9	22.7	11.8 min.
	Additional product	Initial I.F.	42.7	44.5	38.6	53.9 max.
		Initial W.F.	26.8	28.0	25.9	13.7 min.
		W.F. at 50th	26.8	31.8	21.8	11.8 min.
16	Current product	Initial I.F.	65.9	76.3	57.0	93.1 max.
		Initial W.F.	36.4	37.3	34.4	25.5 min.
		W.F. at 50th	33.3	37.7	29.8	21.6 min.
	Additional product	Initial I.F.	68.9	74.9	58.0	93.1 max.
		Initial W.F.	36.3	39.4	33.5	25.5 min.
		W.F. at 50th	33.4	37.6	31.3	21.6 min.

n=5

4.2.2 Contact Retention Force

Test method: The crimped contact shall be inserted into the housing and pulled it out from the housing on the axial direction, and then such load when separating shall be measured. (Testing speed: 1 to 5 mm/sec.)

Test result: UNIT: N

	Measured values			Requirement
	Ave.	Max.	Min.	
Current product	26.0	32.4	21.9	14.7 min.
Additional product	25.1	34.9	21.4	

n=20

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4.3 Electrical Performance Test

4.3.1 Insulation Resistance

Test method: 500 VDC shall be applied between adjacent contacts of the mated specimen to measure insulation resistance. (The connector shall not be soldered to the PCB.)

※ Humidity test: Leave the specimens in a humidity chamber at a temperature of $40 \pm 2^\circ\text{C}$ with relative humidity of 90 to 95% for 240 hours.

Test result: UNIT: $M\Omega$

	Items	Measured values	Requirements
Current product	Initial	1,000 min.	1,000 min.
	After humidity test	500 min.	500 min.
Additional product	Initial	1,000 min.	1,000 min.
	After humidity test	500 min.	500 min.

n=5

4.3.2 Dielectric Withstanding Voltage

Test method: Testing voltage specified below shall be applied between adjacent contacts of the mated specimen for one minute (The connector shall not be soldered to the PCB.)

Initial: 800 VAC
 After test: 500 VAC (Humidity test)

※ Humidity test: Leave the specimens in a humidity chamber at a temperature of $40 \pm 2^\circ\text{C}$ with relative humidity of 90 to 95% for 240 hours.

Test result: UNIT: $M\Omega$

	Items	Measured values
Current product	Initial	Good.
	After humidity test	Good.
Additional product	Initial	Good.
	After humidity test	Good.

n=5