FF 250 PLUG HSG 3P NYLON & FF 250 CAP HSG 3P NYLON

1. INTRODUCTION

1.1 Purpose

This is product validation test. The purpose of this test is to evaluate the performance of FF 250 PLUG HSG 3P & FF 250 TAB H SG 3P. Testing was performed on below products to determine its compliance with the requirements of 108-5319. Rev.D.

1.2 Scope

This report covers the mechanical performance of the FF 250 PLUG HSG 3P NYLON & FF 250 CAP HSG 3P NYLON. Testing was performed at TE Connectivity Shanghai Electrical Test Laboratory (Building ID 554) between 2023-07-25 and 2023-09-14. The associated test number is TP-23-03178.

1.3 Conclusion

The items listed in Clause 1.5 conformed to performance requirements of criteria described in Clause 2. The testing results are only responsible for the specimens tested.

1.4 Test Specimens

Specimens with the following part numbers were used for test:

Test Group	Set Group	Part No.	Rev.	Description	Qty. (pcs)
1	SG1_176774-1_3P_14AWG_250 Series	176774-1	E	FF 250 PLUG HSG 3P NYLON NAT	5
		170032-1	AS	250 FASTON,REC.,20-14 AWG,BR	15
	SG2_176773-1_3P_14AWG_250 Series	176773-1	F	FF 250 TAB HSG 3P NYLON NAT	5
		170340-1	M	FF 250 TAB 20-14AWG BR WITHOUT LATCH	15
2	SG1_176774-1_3P_14AWG_250 Series	176774-1	E	FF 250 PLUG HSG 3P NYLON NAT	5
		170032-1	AS	250 FASTON,REC.,20-14 AWG,BR	15
	SG2_176773-1_3P_14AWG_250 Series	176773-1	F	FF 250 TAB HSG 3P NYLON NAT	5
		170340-1	M	FF 250 TAB 20-14AWG BR WITHOUT LATCH	15
3	SG1_176774-1_3P_14AWG_250 Series	176774-1	E	FF 250 PLUG HSG 3P NYLON NAT	5
		170032-1	AS	250 FASTON,REC.,20-14 AWG,BR	15
	SG2_176773-1_3P_14AWG_250 Series	176773-1	F	FF 250 TAB HSG 3P NYLON NAT	5
		170340-1	M	FF 250 TAB 20-14AWG BR WITHOUT LATCH	15
4	SG1_176774-1_3P	176774-1	E	FF 250 PLUG HSG 3P NYLON NAT	5
	SG2_176773-1_3P	176773-1	F	FF 250 TAB HSG 3P NYLON NAT	5

1.5 Test Sequence

Test Item	Test Group [a]			
	1	2	3	4
	Test Sequence [b]			
Contact Resistance			3	
Unmating Force		3		
Mating Force		2		
Retention Force	2			
Examination of Product	1	1	1	1
Housing Locking Mechanical Strength				2
Sinusoidal Vibration			2	

Note: a). Test group defined per customer requirement.
b). Numbers indicate sequence in which tests are performed.

1.6 Environmental Conditions

Unless otherwise stated, the following environmental conditions prevailed during testing:

Temperature: 15 °C to 35 °C
Relative Humidity: 25% RH to 75% RH

2. Test Procedures and Requirements

No.	Test Item	Requirement	Procedure	Method
2.1	Contact Resistance	45.0 mV max	The contact resistance shall be measured with the current of 15 A. The open circuit test voltage shall be at least 10 V dc or ac peak.	Customer Requirement
2.2	Unmating Force	Min: 58.8 N	Measure force necessary to unmate samples at maximum rate of 100 mm/min.	Customer Requirement
2.3	Mating Force	264.8 N (9.0 Kgf per contact Max.)	Measure force necessary to mate samples at maximum rate of 100 mm/min.	Customer Requirement
2.4	Retention Force	Min:58.8 N (6 Kgf Min.)	Apply an axial pull-off load to crimped wire. Operation speed: 100 mm/minute. Record the force to pull out the crimped wire form the plastic housing.	Customer Requirement
2.5	Examination of Product	No physical damage	Appearance and function examination according to the applicable inspection spec.	Customer Requirement
2.6	Housing Locking Mechanical Strength	Min: 78.4 N	Measure connector locking strength. Operation Speed: 12.7 mm/min.	Customer Requirement

2.7	Vibration	No physical damage nor electrical discontinuity greater than 1 µs.	Subject mated connector to vibration of 33Hz ,4.5g on vibration test machine for 200 hours. During the test, vibration axes are changed in turns of axial and traverse directions every other 50 hours	Customer Requirement

3. SUMMARY OF TEST

Group	SN	Description	Test Item	Qty (pcs)	Test Result				Requirement	Conclusion
					Max.	Min.	Avg.	Unit.		
1	1	All Samples	Examination of Product	10	No physical damage			/	No physical damage	Meet Spec.
	2	SG1_176774-1_3P_14AWG_250 Series	Retention Force	5	131.0	105.3	115.3	N	Min: 58.8 N	Meet Spec.
	2	SG2_176773-1_3P_14AWG_250 Series	Retention Force	5	168.1	131.6	145.0	N	Min: 58.8 N	Meet Spec.
2	1	All Samples	Examination of Product	5	No physical damage			/	No physical damage	Meet Spec.
	2	All Samples	Mating Force	5	205.4	134.1	183.4	N	264.8 N	Meet Spec.
	3	All Samples	Unmating Force	5	121.6	111.8	117.7	N	Min: 58.8 N	Meet Spec.
3	1	All Samples	Examination of Product	5	No physical damage			/	No physical damage	Meet Spec.
	2	All Samples	Sinusoidal Vibration	5	No physical damage nor electrical discontinuity greater than 1 µs.				No physical damage nor electrical discontinuity greater than 1 µs.	Meet Spec.
	3	All Samples	Contact Resistance	5	15.01	12.88	13.96	mV	45.0 mV	Meet Spec.
4	1	All Samples	Examination of Product	5	No physical damage			/	No physical damage	Meet Spec.
	2	All Samples	Housing Locking Mechanical Strength	5	187.7	183.8	185.4	N	Min:78.4 N	Meet Spec.

4. VALIDATION

Requested by:

Cho, Byung Hee

_____ 2023-05-10

TE Connectivity Product Engineering

Prepared by:

2023-10-13

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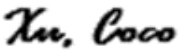
TE Connectivity Shanghai Electrical Components Test Lab.

Approved by:



2023-10-15

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Test Manager

TE Connectivity Shanghai Electrical Components Test Lab.

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