Test Report

Industrial M8 Series
Circular Connector -Cable Assembly

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1. INTRODUCTION

1.1 Purpose

Testing was performed on Industrial M8 and M12 Series Circular Connector to determine its conformance to the requirements to product specification 108-106140.

1.2 Scope

This specification covers performance, test and quality requirements for Industrial M8 and M12 Series Circular Connector. Testing was performed at TE Connectivity Shanghai Electrical Test Laboratory.

1.3 Product Description

Part Number	Interface	Type	Poles
T405XXXXXXX-XXX T406XXXXXXX-XXX	M8 Plug M8 Receptacle	Straight Right Angle Shielded/Unshielded	3 Pins 4 Pins

1.4 Product Qualification Test Sequence

Test or Examination	Test Group				
	A(a)	B	C	D	E
	Test Sequence				
Examination of product	1	3,6,11,20,26	8	9	1
Voltage proof(withstanding voltage)	4	10,19,25	4,7	4,8	
Insulation resistance	3	9,13,18,24	3,6	3,7	
LLCR	2	2,5,8,17,23	2	2,4	2,6
Temperature Rising				5	
Impacting water		21	5	6	
Dust(IP6X)		22(b)			
Durability					4
Mating and Un-mating Force					3,5
Sinusoidal vibration		1			
Mechanical shock		4			
Rapid change in temperature		7		1	
Dry heat		12			
Damp heat, cyclic		14(c),16(d)			
Cold		15			
Mixed flowing gas			1		

(a) When the initial test group A has been completed, the specimens are divided in the 3 groups B, C, D. All connectors in each group shall undergo the tests specified for the relevant group numbers indicate sequence in which tests are performed.
(b) It's allowed to perform with an additional specimen, extending the total number of specimen by 1.
(c) First cycle
(d) Remaining cycles

*** Notes:**

Numbers indicate the sequence in which the tests are performed.

1.5 Environmental Conditions

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

- Temperature: 15 to 35°C
- Relative Humidity: 20 to 80%

2. SUMMARY OF TESTING

2.1. Initial Examination of Product

All specimens were visually examined and no evidence of physical damage detrimental to product performance was observed.

2.2 Test Group A

Group	Test Item	Sample Number	Requirement	Result	Conclusion
A	LLCR	12	8 mΩ Max.	<8 mΩ	meet spec.
	Insulation resistance	12	100MΩ Min	>100MΩ	meet spec.
	Voltage Proof	12	No breakdown or flashover	No breakdown or flashover	meet spec.

2.3 Test Group B

Group	Test Item	Sample Number	Requirement	Result	Conclusion
B	Vibration	3	No physical damage; No electrical discontinuity greater than 1 μs	No physical damage; No electrical discontinuity greater than 1 μs	meet spec.
	LLCR	3	Δ15 mΩ Max.	Δ R-After vibration test<15mΩ	meet spec.
	Mechanical shock	3	No physical damage; No electrical discontinuity greater than 1 μs	No physical damage; No electrical discontinuity greater than 1 μs	meet spec.
	LLCR	3	Δ15 mΩ Max.	Δ R-After vibration test<15mΩ	meet spec.
	Rapid change of temperature	3	No visual change	No visual change	meet spec.
	LLCR	3	Δ15 mΩ Max.	Δ R-After thermal shock<15mΩ	meet spec.
	Insulation resistance	3	100MΩ Min	>100MΩ	meet spec.
	Voltage Proof	3	No breakdown or flashover	No breakdown and flashover	meet spec.
	Dry Heat	3	No visual change	No visual change was found after test. Fig.6	meet spec.
	Insulation resistance	3	100MΩ Min	>100MΩ	meet spec.
	Damp heat, cyclic	3	No visual change	No visual change	meet spec.
	Cold	3	No visual change	No visual change	meet spec.
	Damp heat, cyclic	3	No visual change	No visual change	meet spec.
	LLCR	3	Δ15 mΩ Max.	Δ R< 15mΩ	meet spec.
	Insulation resistance	3	100MΩ Min	>100MΩ	meet spec.
	Voltage Proof	3	No breakdown or flashover	No breakdown and flashover	meet spec.
	Impacting water	3	No water ingress was found after test.	No water ingress was found after test.	meet spec.

2.4 Test Group C

Group	Test Item	Sample Number	Requirement	Result	Conclusion
C	Mixed flowing gas	3	No corrosion and defect	No corrosion and defect	meet spec.
	LLCR	3	Δ15 mΩ Max.	ΔR<15 mΩ	meet spec.
	Insulation resistance	3	100MΩ Min.	>100MΩ	meet spec.
	Voltage Proof	3	No breakdown and flashover	No breakdown and flashover	meet spec.
	Impacting water	3	No water ingress was found after test.	No water ingress was found after test.	meet spec.
	Insulation resistance	3	100MΩ Min.	>100MΩ	meet spec.
	Voltage Proof	3	No breakdown and flashover	No breakdown and flashover	meet spec.
	Examination product	3	No defect	No visual change	meet spec.

2.5 Test Group D

Group	Test Item	Sample Number	Requirement	Result	Conclusion
D	Rapid change of temperature	3	No visual change	No visual change	meet spec.
	LLCR	3	Δ15 mΩ Max.	ΔR<15 mΩ	meet spec.
	Insulation resistance	3	100MΩ Min.	>100MΩ	meet spec.
	Voltage Proof	3	No breakdown or flashover	No breakdown and flashover	meet spec.
	Temperature rising	3	ΔT 30°C Max	ΔT< 30°C	meet spec.
	Impacting water	3	No water ingress was found after test.	No water ingress was found after test.	meet spec.
	Insulation resistance	3	100MΩ Min.	>100MΩ	meet spec.
	Voltage Proof	3	No breakdown or flashover	No breakdown and flashover	meet spec.
	Examination product	3	No defect	No visual change	meet spec.

2.6 Test Group E

Group	Test Item	Sample Number	Requirement	Result	Conclusion
E	LLCR	3	8 mΩ Max.	<8 mΩ	meet spec.
	Mating and Unmating Force	3	Refer to 108-106140	<15N .	meet spec.
	Durability	3	No physical damage	No physical damage	meet spec.
	Mating and Unmating Force	3	Refer to 108-106140	<15N .	meet spec.
	LLCR	3	Δ15 mΩ Max.	ΔR<15 mΩ	meet spec.

3. Conclusion

Based on the test results Industrial M8 Series Circular Connector cable assembly meet all requirements according to Tyco Electronics product specification 108-106140.