

Sealing Performance Validation for SDL2.5 Water Proof Connector

1. INTRODUCTION

1.1. Purpose

Testing was performed on the TE Connectivity (TE) SDL2.5 water proof connector to determine its conformance to the requirements of sealing performance after aging and low temperature.

1.2. Scope

This report covers the electrical and environmental performance of SDL2.5 water proof connector. Testing was performed at Shanghai Electrical Components Test Laboratory between the following date ranges 12JUN2020 to 22JUN2020. The test file number for this testing is TP-20-01064. This documentation is on file at and available from TE Shanghai Electrical Components Test Laboratory under TP-20-01064-RECORD.

1.3. Conclusion

All part numbers listed in Paragraph 1.5 conformed to the electrical and sealing performance after subjected environmental tests.

1.4. Product Description

1.5. Test Specimens

Test Set	Quantity (set)	Part Number	Description
1	9	2321918-2, 2321918-4, 2321918-6, 2321920-2, 2321920-4, 2321920-6, 2321921-1, 2321922-2, 2321922-4, 2321922-6, 2321924-2, 2321924-4, 2321924-6, 2321928-1	SDL2.5 water proof connector 2pos, 4pos, 6pos
2	9		SDL2.5 water proof connector 2pos, 4pos, 6pos

Figure 1

1.6. Test Sequence

Test or Examination	Test Groups (a)	
	1	2
Test Sequence (b)		
Examination of Product	1,4	1,5,7
Termination Resistance		2,4
Cold Storage		3
Accelerated Aging Test	2	
Water Proof Test (IPX7)	3	6



NOTE

- a) See Paragraph 1.5.
- b) Numbers indicate sequence in which tests shall be performed.

Figure 2

1.7. Environmental Conditions

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

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

2. SUMMARY OF TESTING

2.1.

Test Group	Test Item	Test Specimen	Min	Max	Mean	Requirement	Judgement
1	Examination of Product	All	-	-	-	no physical damage	OK
	Accelerated Aging Test	All	-	-	-	-	OK
	Water Proof Test (IPX7)	All	-	-	-	No ingress of water or physical damage	OK
	Examination of Product	All	-	-	-	no physical damage	OK
2	Examination of Product	All	-	-	-	no physical damage	OK
	Termination Resistance	2P	7.16	10.00	8.08	10 mΩ max.	OK
		4P	6.91	8.03	7.50		OK
		6P	6.84	9.67	7.91		OK
	Cold Storage	All	-	-	-	-	OK
	Termination Resistance	2P	7.72	12.16	9.85	20 mΩ max.	OK
		4P	6.87	8.99	8.00		OK
		6P	7.23	11.84	8.66		OK
	Examination of Product	All	-	-	-	no physical damage	OK
	Water Proof Test (IPX7)	All	-	-	-	No ingress of water or physical damage	OK
	Examination of Product	All	-	-	-	no physical damage	OK

Figure 3

3. TEST METHODS

3.1. Examination

Meet requirements of product drawing and TE application specification. After testing, there shall be no corrosive influence on the performance and no physical damage that would impair product performance.

3.2. Termination Resistance

Subject contacts assembled in a housing to 20mV (max.) open circuit at 10 mA. Measure between contact and at wire 75 mm from end of contact. Protect wire from corrosion during testing. Test on mated connectors. Initial: 10 mΩ maximum, Final: 20 mΩ maximum.

3.3. Cold Storage

Test accordance with IEC 60068-2-1, Mated connectors, $-40\pm 2^{\circ}\text{C}$, 96 hours.

3.4. Accelerated Aging Test

Test accordance with UL 486D, Sections 9.4.1.1(a). Subject specimens to $113\pm 5^{\circ}\text{C}$ for 168 hours.

3.5. Water Proof Test (IPX7)

IEC 60529, Test Condition 14.2.7. Immerse mated samples in water for 30 minutes with the lowest point of the sample 1 meter below the surface. Tank must be 8 inches (minimum) in diameter. No ingress of water or physical damage that would impair product performance.