DTM Series R019 & R020 Mod Connectors

1. INTRODUCTION

1.1. Purpose

This report summarizes the results of testing performed on TE Connectivity (TE) DTM13-12P*-R019 and DTM13-12P*-R020 connector systems to determine conformance to the requirements of product specification 108-151090. (* indicates keying arrangement)

1.2. Scope

This report covers the electrical and environmental performance of the DTM13-12P*-R019 & DTM13-12P*-R020 connector systems. Testing was performed at the Winston-Salem Electrical Components Test Laboratory in 2020. The test file number for this testing is listed in Figure 1. This documentation is on file at the Winston-Salem Electrical Components Test Laboratory.

Test Group	Test Report
1	WE-20200445

Figure 1

1.3. Conclusion

The DTM13-12P*-R019 & DTM13-12P*-R020 connector system products listed in Paragraph 1.4 conform to the electrical, mechanical, and environmental performance requirements given in product specification 108-151090.

1.4. Test Specimens

Test specimens were representative of normal production lots. Specimens identified with the part numbers given in Figure 2 were used for testing.

DEUTSCH PART NUMBER	DESCRIPTION	TEST GROUP
DTM13-12PA-R019	DTM Header w/ TNC connector	1
DTM13-12PA-R020	DTM Header w/ SMA connector	
DTM06-12SA-E003	DTM 12-pos plug w/ endcap	
WM-12S	Wedge-lock/TPA	
EEC-325X4B-E016	Mating enclosure for header	
0413-204-2005	Size 20 sealing plugs	

Figure 2

1.5. Environmental Conditions

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

Temperature: 15° to 35°C

Relative humidity: 25 to 75%

1.6. Qualification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)
	1
	TEST SEQUENCE (b)
Examination of Product	1,5
Thermal Shock	2
Vibration	3
Water Immersion	4

(a) Specimens were prepared in accordance production drawings and were selected at random from current production.

(b) Numbers indicate sequence that tests were performed.

Figure 3

2. TEST METHODS AND RESULTS

2.1. Examination of Product (Group 1)

A. Procedure: SAE J2030 Para 6.1

B. Method: Conduct a visual examination for identification of product, torn seals, cracked plastic, etc.

C. Requirement: The connectors shall be correctly constructed, marked and show good quality and workmanship. Connector after conditioning shall not show signs of damage or any detectable loss of function.

D. Result: **PASSED.**

2.2. Thermal Shock (Group 1)

A. Procedure: SAE J2030 Para 6.13

B. Method: The mated connector shall be subjected to 10 cycles of thermal shock. One cycle shall consist of a soak time at –55 °C ambient, then a transition within 2 min to an ambient of 125 °C, with a soak time there and then a transition back to -55 °C ambient within 2 min. The soak times shall be established as the time necessary to bring the internal connector temperature on test to within 5 °C of each of the ambient temperatures.

C. Requirement: No evidence of cracking, chipping, or other damage detrimental to the normal operation of the connector.

D. Result: **PASSED.**

2.3. Vibration (Group 1)

A. Procedure: SAE J2030 Para 6.15*

B. Method:

a. Sweep time and duration. The entire frequency range of 10 to 2000 Hz and return to 10 Hz shall be traversed in 20 min. This cycle shall be performed 12 times in each of three mutually perpendicular directions (total of 36 times), so that the motion shall be applied for a total period of approximately 12 h (4 hours per axis). Interruptions are permitted provided the requirements for rate of change and test duration are met.

b. Initial displacement 1.78 mm DA

c. Maximum acceleration 20 g (the transition from displacement to acceleration occurs at 75 Hz)

d. *Mechanical test only, electrical continuity is not monitored.

C. Requirement: No evidence of cracking, chipping, or other damage detrimental to the normal operation of the connector.

D. Result: **PASSED.**

2.4. Water Immersion (Group 1)

A. Procedure: SAE J2030

B. Method: The wired mated connectors shall be placed in an oven at +125°C for 1 hour minimum then immediately be placed in water with a 5% salt by weight content and a 0.1 g/L wetting agent to a depth of 1 meter for 4 hours. Water temperature to be +23°C. The free ends must not enter the water.

C. Requirement: No evidence of moisture within the electronics enclosure housing

D. Result: **PASSED.**

3. REVISION HISTORY

Rev Ltr	Brief Description of Change	Date	Dwn	Apvd
A	Initial Release	11-Aug-20	KM	KM