



The product described in this document has not been fully tested to ensure conformance to the requirements outlined below. Therefore, TE Connectivity (TE) makes no representation or warranty, express or implied, that the product will comply with these requirements. Further, TE may change these requirements based on the results of additional testing and evaluation. Contact TE Engineering for further details.

## DTM Series R019 & R020 Mod Connectors

### 1. SCOPE

#### 1.1. Content

This specification covers performance, tests and quality requirements for the TE Connectivity (TE) DTM13-12P\*-R019 and DTM13-12P\*-R020 connector system. (\* indicates keying arrangement)

#### 1.2. Qualification

When tests are performed on the subject product line, procedures specified below shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

#### 1.3. Qualification Test Results

Successful qualification testing on the subject product line was completed in 2020. The Qualification Test Report number for this testing is [501-151090](#). These documents are on file at and available from Product Engineering, Industrial Commercial Transportation (ICT).

### 2. APPLICABLE DOCUMENTS AND FORMS

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies.

#### 2.1. TE Documents

- 108-151010: Product Specification, DTM Series Connectors
- 108-32266: Product Specification, TNC Bulkhead TO UMCC Gen1 RF Coaxial Cable Assembly
- 108-32265: Product Specification, SMA Bulkhead TO UMCC Gen1 RF Coaxial Cable Assembly
- 501-151090: Qualification Test Report

#### 2.2. Product Drawings

- DTM13-12PX-R019, DTM13-12PX-R020

#### 2.3. Industry Documents

- SAE J2030 2015-06

#### 2.4. Reference Document

- [109-197](#) Test Specification (TE Test Specification vs EIA and IEC Test Methods)

### 3. REQUIREMENTS

#### 3.1. Design and Construction

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing.

## 3.2. Ratings

Voltage	Current	Temperature
See individual Product Specification for applicable connector interface	See individual Product Specification for applicable connector interface	DTM Header: -55 to +125 °C SMA/TNC: -45 to +85 °C

## 3.3. Test Requirements and Procedures Summary

Unless otherwise specified, all tests shall be performed at ambient environmental conditions. All tests on headers are performed using mating Electronics Enclosure: EEC-325X4B-E016

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Initial examination of product	Meets requirements of product drawing.	Conduct a visual examination only for identification of product, torn seals, cracked plastic, etc.
Final examination of product	Meets visual requirements.	Conduct a visual examination for identification of product such as torn seals, cracked plastic, evidence of fluid or dust ingress in sealed connector systems, arcing, charring, melting, or anything that could affect the performance and serviceability of the product.
<b>ELECTRICAL</b>		
See Product Specification for applicable connector interface		
<b>MECHANICAL</b>		
<b>Vibration</b>	<b>No evidence of cracking, chipping, or other damage detrimental to the normal operation of the connector.</b>	<p>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.</p> <p>b. Initial displacement 1.78 mm DA</p> <p>c. Maximum acceleration 20 g (the transition from displacement to acceleration occurs at 75 Hz)</p> <p>d. Mechanical test only, electrical continuity is not monitored.</p>
<b>ENVIRONMENTAL</b>		
<b>Thermal Shock</b>	<b>No evidence of cracking, chipping, or other damage detrimental to the normal operation of the connector.</b>	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.
<b>Water Immersion</b>	<b>No evidence of moisture within the electronics enclosure housing</b>	The mated connectors shall be placed in an oven at 125 °C ± 3 °C for 1 h then immediately be placed in water with a 5% salt in weight content and 0.1 g/L wetting agent, to a depth of 1 m for 4 h. Water temperature is to be 23 °C ± 3 °C. Visually inspect for moisture inside the enclosure.

**i** **NOTE** Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown above

3.4. Product Qualification and Requalification Test Sequence

	TEST SEQUENCE (a)									
Initial examination of product	1									
Thermal Shock	2									
Vibration	3									
Water Immersion	4									
Final examination of product	5									

**i** **NOTE** (a) Numbers indicate sequence in which tests are performed.