NUMBER 108-12007

PRODUCT SPECIFICATION

A-MP* COAXIGRIP* CATV CONNECTORS

1.0 SCOPE

1.1 This specification contains performance requirements and test procedures for COAXIGRIP CATV Connectors. These connectors are intended to provide a reliable electrical and mechanical termination for use on CATV Semi-Rigid Cables.

2.0 APPLICABLE DOCUMENTS

2.1 The following specifications and standards form a part of this specification to the extent specified herein.

2.1.1 Industrial Specifications:

ASTM A167	Stainless Steel Sheet & Strip
ASTM A276	Stainless Steel Rod & Bar
ASTM B221-Alloy 6061 & 6262	Aluminum Alloy Extr. Rod, Bar, Shapes & Tubing
ASTM D2000	Elastomeric Materials For Automotive Applications, Classification System For.

2.1.2 Test Specifications:

Mil-C-45662	Calibration of Standards
Mil-Std-202	Test Methods for Electrical and Electronic Component Parts

3.0 REQUIREMENTS

3.1 Definitions. For the purpose of this specification, the following definitions shall apply.

3.1.1 Connector Assembly. A connector assembly consists of a connector plug terminated to cable for test purpose.

3.1.2 Connector Plug. Intended for termination to the cable end containing a rotating threaded collar for locking to its intended receptacle.

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3.2 Design and Construction. Connectors shall be of the design and construction specified on the AMP Product Drawing.

3.3 Materials and Finish. The materials used in the construction of this product and the finish shall be as specified on the AMP Product Drawing.

3.4 Functional Characteristics.

Nominal Impedance	75 ohms
Frequency Range	50 - 350 MHz
Operating Temperature	-50° to +150°F

3.5 Performance. Connectors shall be designed to meet the mechanical and electrical performance requirements specified herein. To verify compliance to this specification, the required samples shall be tested and shall meet the minimum requirements specified.

3.5.1 Contact Resistance. When tested as specified in Paragraph 4.5.1, the resistance between the connector body and the cable sheath shall not exceed .07 milliohms.

3.5.2 Return Loss (VSWR). When tested as specified in Paragraph 4.5.2, the return loss shall be 35Db minimum between a frequency range of 50 - 350 MHz.

3.5.3 R.F. Leakage. When tested as specified in Paragraph 4.5.3, the minimum leakage shall be 60Db minimum throughout a frequency range of 50 - 350 MHz.

3.5.4 Cable Retention. When tested as specified in Paragraph 4.5.4, the connector assembly shall not break or become separated from the cable when an axial force of 400 pounds is applied.

3.5.5 Humidity. Upon completion of the 120 hour humidity exposure specified in Paragraph 4.5.5, the connector assembly shall meet the requirements for Contact Resistance, Paragraph 3.5.1.

3.5.6 Temperature Cycling. Upon completion of the exposure specified in Paragraph 4.5.6, the connector assembly shall meet the requirements for Contact Resistance, Paragraph 3.5.1.

3.5.7 Low Frequency Vibration. When tested as specified in Paragraph 4.5.7, the connector shall be subjected to 8 hours of Vibration. Upon completion, there shall be no evidence of physical damage and the connector shall meet the requirements for Contact Resistance, Paragraph 3.5.1.

3.5.8 Hydrostatic Pressure. During the test specified in Paragraph 4.5.8, there shall be no evidence of water leakage at the connectors or between the connector and cable.

4.0 QUALITY ASSURANCE PROVISIONS

4.1 General Provisions. The quality provisions specified herein shall be employed in the manufacturing and testing of this product to assure normal production units meet the performance requirements of this specification.

4.2 Classification of Test.

4.2.1 Qualification Inspection

4.3 Test Conditions.

4.3.1 Measurements. Measurements shall be taken with instruments that have been calibrated in accordance with Specification Mil-C-45662.

4.3.2 Laboratory Conditions. Unless otherwise specified, normal laboratory temperature, humidity and atmospheric pressure shall be considered acceptable for test purposes.

4.4 Qualification Inspection.

4.4.1 Sample Selection. Connectors selected for testing shall be representative of current design and construction. Preparation of test samples shall be conducted in accordance with AMP Instruction Sheets governing assembly and crimping technique.

4.4.2 Test Procedure. Qualification Inspection shall be conducted in accordance with Table I in the sequence specified. Each test group shall consist of three connector assemblies.

TABLE I

TEST OR EXAMINATION	TEST GROUP AND SEQUENCE I	TEST GROUP AND SEQUENCE II
Contact Resistance	1-3-5-7	
Return Loss (VSWR)		1
R.F. Leakage		2
Cable Retention	9	
Humidity	4	
Temperature Cycling	6	
Low Frequency Vibration	2	
Hydrostatic Pressure	8	

4.5 Test Methods.

4.5.1 Contact Resistance. Measurements shall be taken by probing the connector at the center of the wrench flat to a point on the cable .125 inch behind the cable entrance. All measurements shall be taken with an open circuit voltage of less than 50 millivolts. Test current through the specimen shall not exceed 150 milliamperes.

4.5.2 Return Loss (VSWR). Return loss measurements shall be conducted between a frequency range of 50 to 350 MHz. The system shall be calibrated by measuring the return loss of a length of cable using an impedance bridge and matching load. The connector shall then be inserted into the center of the cable and the return loss again measured.

4.5.3 R.F Leakage. Leakage measurements shall be recorded throughout a frequency range of 50 - 350 MHz. Test frequencies shall approximate center frequencies of television channels 2 - 13.

4.5.4 Cable Retention. The test shall be conducted by firmly holding the connector and cable between the jaws of a tensile machine. An axial force shall be applied between the connector and cable at a rate of 1 inch per minute. The force shall be continued until the cable and connector become separated.

4.5.5 Humidity. Samples shall be subjected to 120 hours of continuous humidity in accordance with Method 103B, Test Condition A of Mil-Std-202. Throughout the exposure, relative humidity shall be maintained between 90 to 95% while at a temperature of 40 $\pm 2^{\circ}$C. Prior to exposure, exposed cable ends shall be sealed with suitable sealing material to preclude the entry of moisture into the specimens. Upon completion of the exposure, the samples shall be permitted to dry for four hours at room temperature ambient prior to conducting final measurements.

4.5.6 Temperature Cycling. Samples shall be subjected to a total of ten days of temperature cycling with each complete daily cycle as follows:

16 hours at +150°F
1 hour at +75°F
6 hours at -50°F
1 hour at +75°F

Upon completion of the exposure, samples shall be permitted to stabilize at room temperature ambient for one hour prior to conducting final measurements. Interruption of test may be considered to comply with regular working hours.

4.5.7 Low Frequency Vibration. Connectors shall be firmly attached by threading into a fixture plate bolted to a vibration shaker table. The cable ends shall be securely fastened to a rigid support located twelve inches above the vibration table. Vibration shall be conducted in accordance with Method 201A of Mil-Std-202 with the following exceptions:

1. Test shall be conducted for a period of four hours in two planes perpendicular to the axis of the connectors.

2. The frequency range shall be 10-25-10 Hz traversed in one minute with maximum force not to exceed 10 G's.

4.5.8 Hydrostatic Pressure. Connectors shall be subjected to a positive water pressure of 25 psi for a period of four hours. Throughout the exposure, report evidence of water leakage at the connectors or between the connector and cable.