QUALIFICATION TEST REPORT

COMMUNICATION OUTLET
INSTALLATION KIT

501-214 Rev. A

Product Specification:	108-1206 Rev. 0
CTL No.:	CTL1290-065-050
Date:	February 19, 1993
Classification:	Unrestricted
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Per EC:	0990-0062-94

Corporate Test Laboratory Harrisburg, Pennsylvania

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(R1290TS)

AMP

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CORPORATE TEST LABORATORY

Qualification Test Report
Communication Outlet Installation Kit

1. Introduction

1.1 Purpose

Testing was performed on AMP* Communication Outlet Installation Kit to determine its conformance to the requirements of AMP Product Specification 108-1206 Rev. 0.

1.2 Scope

This report covers the electrical, mechanical, and environmental performance of the Communication Outlet Installation manufactured by the Communication Products Division of the Capital Goods Business Group. The testing was performed between November 15, 1992 and February 14, 1993.

1.3 Conclusion

The Communication Outlet Installation Kit meets the electrical, mechanical, and environmental performance requirements of AMP Product Specification 108-1206 Rev. 0.

*Trademark

1.4 Product Description

The Communication Outlet Installation Kit provides an inclosure and a universal connection interface between the premise wiring of an office and the user's network of communications equipment. The outlet is adaptable to a variety of interface configurations by means of plug-in adapter inserts.

1.5 Test Samples

The test samples were randomly selected from normal current production lots, and the following part numbers were used for test:

Test Group	Quantity	Part Number	Description
1,2,3,4	2 ea.	555601-1	Outlet Kit
1,2,3,4	4 ea.	556859-1	PC Board

1.6 Qualification Test Sequence

	Test Groups			
Test or Examination	1	2	3	4
Examination of Product	1,10	1,6	1,5	1,8
Termination Resistance	3,7	2,5	2,4	
Dielectric Withstanding Voltage				3,7
Insulation Resistance				2,6
Mating Force	2			
Insert Retention	8			
Card Edge Retention	9			
Vibration	5			
Physical Shock	6			
Durability	4			
Thermal Shock				4
Humidity-Temperature Cycling				5
Mixed Flowing Gas			3	
Temperature Life		3		

The numbers indicate sequence in which tests were performed.

2. Summary of Testing

2.1 Examination of Product - All Groups

All samples submitted for testing were selected from normal current production lots. They were inspected and accepted by the Product Assurance Department of the Capital Goods Business Group.

2.2 Termination Resistance, Dry Circuit - Groups 1,2,3

All termination resistance measurements, taken at 100 milliamperes dc. and 50 millivolts open circuit voltage, had less than a maximum change in resistance (ΔR) after testing of 6 milliohms.

Test Group	No. of Samples	Condition	Min.	Max.	Mean
1	24	After Mechanical (ΔR)	-0.40	+0.34	-0.179
2	24	After Temp. Life (ΔR)	-1.03	+2.28	+0.338
3	24	After Mixed Gas (ΔR)	-0.69	+0.42	+0.092

All values in milliohms

2.3 Dielectric Withstanding Voltage - Group 4

No dielectric breakdown or flashover occurred when a test voltage was applied between adjacent circuits.

2.4 Insulation Resistance - Group 4

All insulation resistance measurements were greater than 1000 megohms.

2.5 Vibration - Group 1

No discontinuities of the contacts were detected during vibration. Following vibration, no cracks, breaks, or loose parts on the connector assemblies were visible.

2.6 Physical Shock - Group 1

No discontinuities of the contacts were detected during physical shock. Following physical shock testing, no cracks, breaks, or loose parts on the connector assemblies were visible.

2.7 Insert Mating Force - Group 1

All mating force measurements were less than 9 pounds maximum.

2.8 Insert Retention - Group 1

No physical damage occurred to the contacts, the housing, or the faceplate and no contacts dislodged from the housings as a result of applying an axial load of 25 pounds to the center of the insert.

2.9 Card Edge Retention - Group 1

No physical damage occurred to the contacts, the housing, or the latching mechanism and no contacts dislodged from the housings as a result of applying an axial load of 20 pounds to the back of the card edge assembly.

2.10 Durability - Group 1

No physical damage occurred to the samples as a result of 100 cycles of inserting and extracting the PC Board from the card edge connector.

2.11 Thermal Shock - Group 4

No evidence of physical damage to either the contacts or the switch was visible as a result of thermal shock.

2.12 Humidity-Temperature Cycling - Group 4

No evidence of physical damage to either the contacts or the switch was visible as a result of exposure to humidity-temperature cycling.

2.13 Mixed Flowing Gas - Group 3

No evidence of physical damage to either the contacts or the switch was visible as a result of exposure to the pollutants of mixed flowing gas.

2.14 Temperature Life - Group 2

No evidence of physical damage to either the contacts or the switch was visible as a result of exposure to an elevated temperature.

3. Test Methods

3.1 Examination of Product

Product drawings and inspection plans were used to examine the samples. They were examined visually and functionally.

3.2 Termination Resistance, Low Level

Termination resistance measurements at low level current were made, using a four terminal measuring technique (Figure 1). The test current was maintained at 100 milliamperes dc, with an open circuit voltage of 50 millivolts dc.

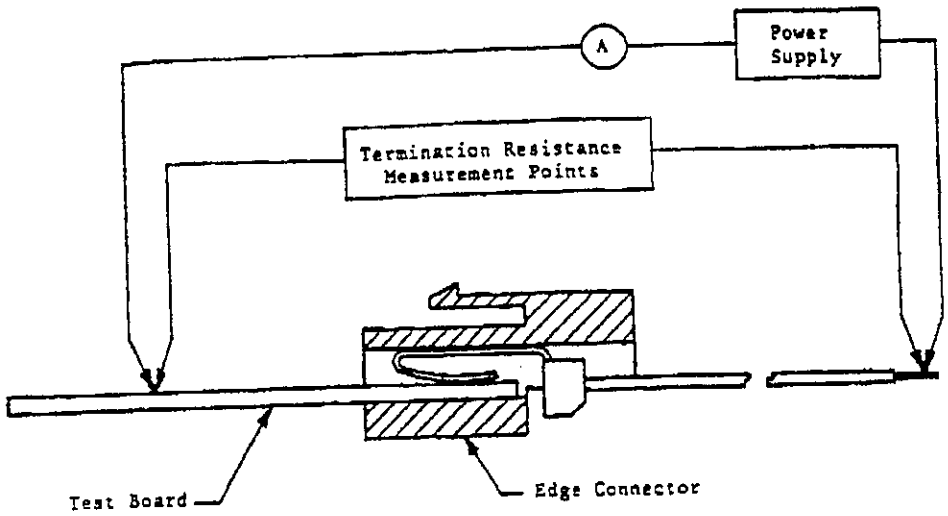

Figure 1
Typical Termination Resistance Measurement Points

3.3 Dielectric Withstanding Voltage

A test potential of 500 vac was applied between the adjacent circuits. This potential was applied for one minute and then returned to zero.

3.4 Insulation Resistance

Insulation resistance was measured between adjacent circuits, using a test voltage of 500 volts dc. This voltage was applied for two minutes before the resistance was measured.

3.5 Vibration, Sine

Communication Outlet Assemblies were subjected to sinusoidal vibration, having a simple harmonic motion with an amplitude of 0.06 inch, double amplitude. The vibration frequency was varied uniformly between the limits of 10 and 50 Hz and returned to 10 Hz in one minutes. This cycle was performed 120 times in each of three mutually perpendicular planes, for a total vibration time of 6 hours. Connectors were monitored for discontinuities greater than one microsecond, using a current of 100 milliamperes in the monitoring circuit.

3.6 Physical Shock

Communication Outlet Assemblies were subjected to a physical shock test, having a half-sine waveform of 50 gravity units (g peak) and a duration of 11 milliseconds. Three shocks in each direction were applied along the three mutually perpendicular planes, for a total of 18 shocks. The connectors were monitored for discontinuities greater than one microsecond, using a current of 100 milliamperes in the monitoring circuit.

3.7 Mating Force

The force required to mate PC boards with the card edge connector was measured, using a free floating fixture with the rate of travel at 0.5 inch/minute.

3.8 Card Edge Retention

An axial load of 20 pounds to the back of the card edge assembly. The force was applied in a direction to cause removal of the card edge assembly from the housing.

3.9 Insert Retention

An axial load of 25 pounds to the PC Board. The force was applied in a direction to cause removal of the PC board and insert from the housing.

3.10 Durability

The PC Board was inserted and extracted for 100 cycles.

3.11 Thermal Shock

Samples were subjected to 25 cycles of temperature extremes, with each cycle consisting of 30 minutes at each temperature. The temperature extremes were -40°C and 60°C. The transition between temperatures was less than one minute.

3.12 Humidity-Temperature Cycling

Samples were exposed to 10 cycles of humidity- temperature cycling. Each cycle lasted 24 hours and consisted of cycling the temperature between 25°C and 65°C twice, while the relative humidity was held at 95%.

3.13 Mixed Flowing Gas, Class II

Switches were exposed for 20 days to an mixed flowing gas Class II exposure. Class II exposure is defined as a temperature of 30°C and a relative humidity of 70%, with the pollutants of Cl_2 at 10 ppb, NO_2 at 200 ppb, and H_2S at 10 ppb.

3.14 Temperature Life

Switches were exposed to a temperature of 60°C for 500 hours.

4. Validation

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