AMP CO Plus Insert for Cat. 6 Applications

1. SCOPE

1.1 Content

This specification covers performance, tests and quality requirements for AMP* CO Plus Insert for Cat. 6 Applications. This assembly provides a universal connection interface between premise wiring of an office and the user's network of communications equipment.

1.2 Qualification

When tests are performed on subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1 Tyco Electronics Documents

A.	109-197:	AMP Test Specifications vs EIA and IEC Test Methods
B.	501-93030:	Qualification Test Report
C.	501-214:	Communication Outlet Installation Kit
D.	501-20018:	AMP CO Modular Jack Adapter Insert, Installation Kit, Extension of QTR 501-214
E.	501-93005:	Side Entry Jack for Cat. 6 Applications
F.	C-336548:	AMP CO Cat. 6 Single Insert Assembly, T568A
G.	C-336549:	AMP CO Cat. 6 Dual Insert Assembly, 100BT/TR
H.	C-336553:	AMP CO Cat. 6 Dual Insert Assembly, 100BT/100BT
I.	C-336554:	AMP CO Cat. 6 Dual Insert Assembly, TR/TR
J.	C-336556:	AMP CO Cat. 7 Dual Insert Assembly, ATM622
K.	C-1644027:	AMP CO Cat. 6 Single Insert Assembly, T568B
L.	C-1644031:	AMP CO Cat. 6 Single Insert Assembly, T568A
M.	C-1711135:	AMP CO PoE mode A Dual Insert Assembly
N.	C-1711140:	AMP CO ISDN & PoE mode A Insert Assembly
O.	C-1711125:	AMP CO PoE B->A for PP Dual Insert Assembly (may be used as counter part of Insert 1711135; Product Spec. applicable to Insert 1711125 is 108-93004)
P.	C-1711130:	AMP CO ISDN & PoE B->A for PP Dual Insert Assembly (may be used as counter part of Insert 1711140; Product Spec. applicable to Insert 1711130 is 108-93004)

2.2 Other Documents

A.	ISO/IEC 11801:	Generic Cabling for Customer Premises (2002/E)
B.	EN 50173:	Information Technology; Generic Cabling Systems
C.	IEC 60512:	Basic testing procedures and measuring methods for electromechanical components for electronic equipment,
D.	IEC 60068:	Basic Environmental testing procedures, Test Spec. as in Fig. 1
E.	ANSI/TIA/EIA 568-C.2:	Commercial Building Telecommunications Cabling Standard
F.	GHMT test reports:	No P1195a-03-E, P1196a-03-E, P1197a-03-E and P1198a-03-E, measurements as Connecting Hardware

* Trademark
| Indicates change

3. REQUIREMENTS

3.1 Design and Construction

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

3.2 Materials

Materials shall be as specified on applicable product drawing.

3.3 Ratings

A. Voltage: 72 V dc
B. Current: signal application only
C. Temperature: -40 to 70 ºC

3.4 Performance and Test Description

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions in accordance with 5.3.1. of IEC 60068-1.

3.5 Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of Product	Meets requirements of product drawing	Visual, dimensional and functional per applicable quality inspection plan
	ELECTRICAL	
Input/Output Resistance	Signal contact: 200 mΩ max. Screen contact: 100 mΩ max.	IEC 60512-2-1, Test 2a Subject samples to 20 mV max. open circuit at 100 mA max. See Figure 3
Insulation Resistance	500 MΩ min.	IEC 60512-3-1, Test 3a Method C Test at 100 V dc between adjacent contacts
Dielectric Withstanding Voltage	1000 V dc or ac peak, contact to contact 1 minute hold 2 mA max. leakage current 1500 V dc or ac peak, contact-ground	IEC 60512-4-1, Tets 4a Method A Test between adjacent contacts of unmated assemblies and between contacts and ground fingers
Current-Carrying Capacity	IEC 60603-7 Ed. 3 Maximum permissible current for a given ambient temperature (t) is: $I_{(t)} = 1{,}76 \cdot \left(1 - \frac{t}{90}\right)^{0{,}5}$	IEC 60512-5-2, Test 5b See Figure 4
	TRANSMISSION	
Insertion Loss (conn. hardware config.)	ISO/IEC 11801 Ed. 2.1, Amd. 2 TIA-568-C.2 Cat. 6 limit	IEC 60603-7-5 Ed. 1.0 TIA-568-C.2 IEC 60512-25-2 and -27-100 (CDV)
Return Loss (conn. hardware config.)	ISO/IEC 11801 Ed. 2.1, Amd. 2 TIA-568-C.2 Cat. 6 limit	IEC 60603-7-5 Ed. 1.0 TIA-568-C.2 IEC 60512-25-5 and -27-100 (CDV)
Near End Crosstalk (conn. hardware config.)	ISO/IEC 11801 Ed. 2.1, Amd. 2 TIA-568-C.2 Cat. 6 limit	IEC 60603-7-5 Ed. 1.0 TIA-568-C.2 IEC 60512-25-1 and -27-100 (CDV)
Far End Crosstalk (conn. hardware config.)	ISO/IEC 11801 Ed. 2.1, Amd. 2 TIA-568-C.2 Cat. 6 limit	IEC 60603-7-5 Ed. 1.0 TIA-568-C.2 IEC 60512-25-1 and -27-100 (CDV)

Delay (conn. hardware config.)	ISO/IEC 11801 Ed. 2.1, Amd. 2 TIA-568-C.2 Cat. 6 limit	IEC 60603-7-5 Ed. 1.0 TIA-568-C.2 IEC 60512-25-4 and -27-100 (CDV)
Delay Skew (conn. hardware config.)	ISO/IEC 11801 Ed. 2.1, Amd. 2 TIA-568-C.2 Cat. 6 limit	IEC 60603-7-5 Ed. 1.0 TIA-568-C.2 IEC 60512-25-4 and -27-100 (CDV)
ENVIRONMENTAL		
Stress Relaxation	See Note	IEC 60512-5, Test 9b Subject mated samples to temp. life at 70ºC for 500 hours 0,5 A 50 %, no current 50 % of connectors
Corrosion Testing	See Note	IEC 60512-11-7, Test 11g, Conditions: SO_2 0,5 ppm H_2S 0,1 ppm (Volume) T= (25 ± 1)ºC HR= (75 ± 3) % Test time 4 days

NOTE *Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests as specified in Test Sequence in Figure 2.*

Figure 1 (End)

3.6 Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)					
	1	2	3	4	5	6
	Test Sequence (b)					
Examination of Product	1,6	1,11	1			
Input/Output Signal Resistance	2,5	2,10				
Input/Output Screen Resistance	3	3				
Insulation Resistance		5,9				
Dielectric Withstanding Volt.		6,8				
Current-Carrying Capacity		4				
Insertion Loss			2			
Return Loss			3			
Near End Crosstalk			4			
Far End Crosstalk			5			
Delay			6			
Delay Skew			7			
Stress Relaxation		7				
Corrosion Testing	4					

NOTE

(a) See Paragraph 4.1.A.

(b) Numbers indicate sequence in which tests are performed.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1 Qualification Testing

A. Sample Selection

Samples shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall each consist of a minimum of 5 samples.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 2.

4.2 Requalification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development / product, quality and reliability engineering.

4.3 Acceptance

Acceptance is based in verification that the product meets the requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.4 Quality Conformance Inspection

Applicable Tyco AMP quality inspection plan will specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with applicable product drawing and this specification.

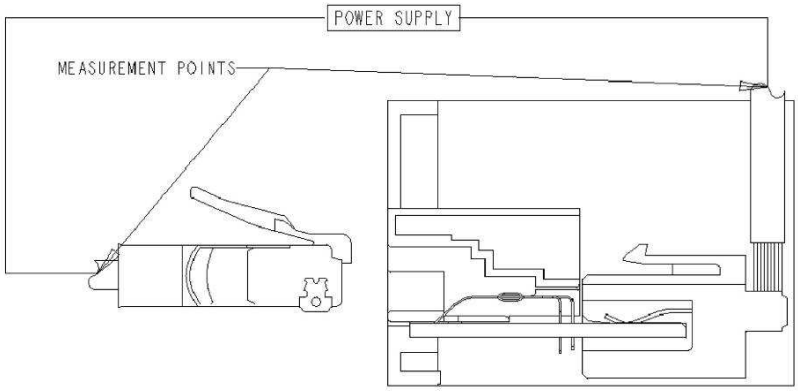

Figure 3

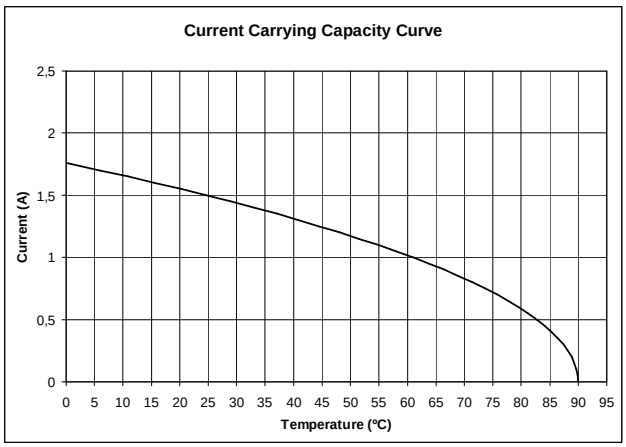

Figure 4