3.5 mm IDC PIVOT BLOCK* Connector

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the TE Connectivity 3.5 mm IDC PIVOT BLOCK* Connector. This connector accepts 22 to 24 AWG solid and stranded (7 strand) conductors with maximum PVC (do not use SRPVC, irradiated PVC, PTFE, or any other high density insulation) insulation of 1.52 mm and is available in 2 to 16 positions. Conductor termination is accomplished with IDC style contacts. The connector mates with Buchanan and other 3.5 mm centerline industry headers.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 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 on 31Jul03. The Qualification Test Report number for this testing is 501-561. This documentation is on file at and available from Engineering Practices and Standards (EPS).

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. TE Connectivity Documents

- 108-1657: Product Specification (Connector, Pivot, Single, Two & Four Pair)
- 109-197: Test Specifications vs EIA and IEC Test Methods
- 501-561: Qualification Test Report

2.2. Commercial Standards

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications
- UL 1059: Terminal Blocks

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Materials

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3. Ratings

- Voltage: 250 volts AC
- Current: 5 amperes maximum
- Temperature: -40 to 80℃

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per EIA-364.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Initial examination of product.	Meets requirements of product drawing.	EIA-364-18. Visual and dimensional (C of C) inspection per product drawing.
Conditioning of product.	Meets requirements of product drawing.	UL 1059, paragraph 36.1.
Final examination of product.	Meets visual requirements.	EIA-364-18. Visual inspection.
ELECTRICAL		
Termination resistance.	20 milliohms maximum.	EIA-364-23. Subject specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage.
Insulation resistance.	500 megohms minimum.	EIA-364-21. Test between adjacent contacts of unmated specimens.
Withstanding voltage.	1 minute hold with no breakdown or flashover.	EIA-364-20, Condition I. 1500 volts AC at sea level. Test between adjacent contacts of unmated specimens.
Temperature rise vs current.	30℃ maximum temperatu re rise at specified current.	EIA-364-70, Method 1. Stabilize at a single current level until 3 readings at 5 minute intervals are within 1℃.
MECHANICAL		
Vibration, random.	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-28, Test Condition VII, Condition D. Subject mated specimens to 3.10 G's rms between 20-500 Hz. 1 hour in each of 3 mutually perpendicular planes. See Figure 3.
Mechanical shock.	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-27, Method A. Subject mated specimens to 50 G's half-sine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. See Figure 3.

Figure 1 (continued)

Durability.	See Note.	EIA-364-9. Mate and unmate specimens for 10 cycles at a maximum rate of 500 cycles per hour.
Mating force.	7.56 N [1.7 lbf] minimum per contact. 13.34 N [3.0 lbf] maximum per contact.	EIA-364-13. Measure force necessary to mate specimens at a maximum rate of 12.7 mm [.5 in] per minute.
Unmating force.	4.45 N [1.0 lbf] minimum per contact. 8.9 N [2.0 lbf] maximum per contact.	EIA-364-13. Measure force necessary to unmate specimens at a maximum rate of 12.7 mm [.5 in] per minute.
Terminating force.	111.2 N [25 lbf] maximum for 2 wire stuffer. 166.8 N [37.5 lbf] maximum for 3 wire stuffer.	EIA-364-13. Measure force necessary to terminate specimens at a maximum rate of 12.7 mm [.5 in] per minute.
Unterminating force.	2.224 N [0.5 lbf] minimum for 2 wire stuffer. 3.336 N [0.75 lbf] minimum for 3 wire stuffer.	EIA-364-13. Measure force necessary to un-terminate specimens at a maximum rate of 12.7 mm [.5 in] per minute.
ENVIRONMENTAL		
Thermal shock.	See Note.	EIA-364-32. Subject specimens to 5 cycles between -40 and 80℃.
Humidity-temperature cycling.	See Note.	EIA-364-31, Method III. Subject specimens to 10 cycles (10 days) between 25 and 65℃ at 80 to 100% RH.
Temperature life.	See Note.	EIA-364-17, Method A, Test Time Condition C. Subject mated specimens to 80℃ for 500 hours.

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 in Figure 2.
Figure 1 (end)

Figure 1 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)			
	1	2	3	4
	Test Sequence (b)			
Initial examination of product	1	1	1	1
Conditioning of product	2	2	2	2
Dry circuit resistance	4,8	3,8		
Insulation resistance			3,7	
Dielectric withstanding voltage			4,8	
Temperature rise vs current		4,9		
Vibration	6	7(c)		
Mechanical shock	7			
Durability	5			
Mating force	3			
Unmating force	9			
Terminating force				3
Unterminating force				4
Thermal shock			5	
Humidity-temperature cycling		5(d)	6	
Temperature life		6		
Final examination of product	10	10	9	5

NOTE

(a) See paragraph 4.1.A.
(b) Numbers indicate sequence in which tests are performed.
(c) Discontinuities shall not be measured. Energize at 18℃ level for 100% loadings per Quality Specification 102-950.
(d) Precondition specimens with 5 durability cycles.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Test groups 1, 2 and 4 shall each consist of a minimum of 30 contacts in both right angle and vertical orientations. Test group 3 shall consist of a minimum of 5 assemblies.

B. Test Sequence

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

4.2. Requalification Testing

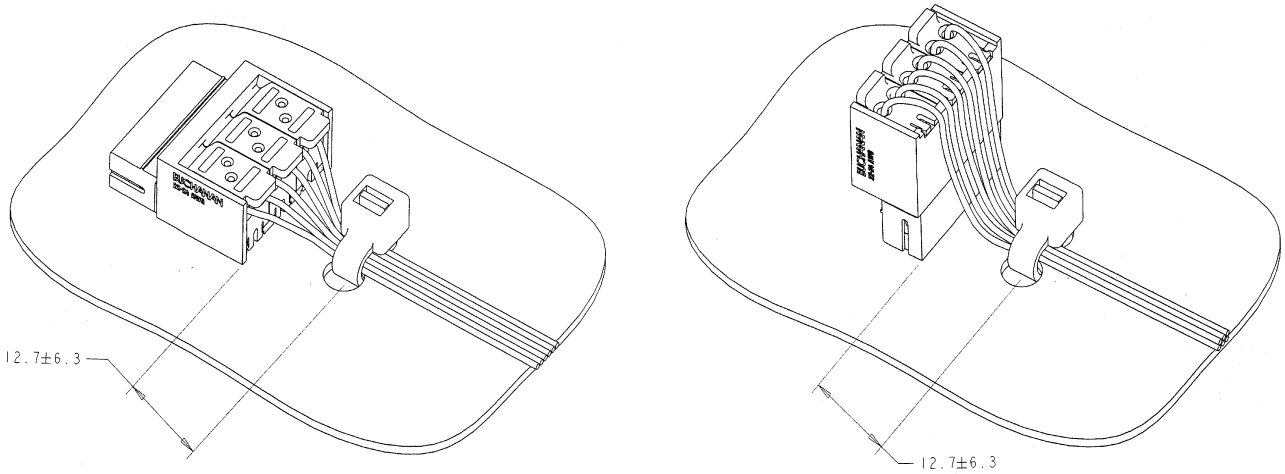
If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.3. Acceptance

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

4.4. Quality Conformance Inspection

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



Horizontal Vertical

Figure 3

Vibration and Mechanical Shock Mounting Fixtures