1. SCOPE

1.1 Content

This specification covers performance, test and quality requirements for the I.D.C. Siameze Terminals. These terminals are designed and developed for enamel and bare copper wire I.D.C. connection for motors and electronic devices for household appliances and other commercial equipment.
Product is applicable, using proper part number, for a wire range from 36 AWG [0,13 mm] up to 18 AWG [1,016 mm] of diameter.
Coating of organic polymer material having NEMA temperature ratings of 105 to 200°C

1.2 Qualification

When tests are performed on the subject product, procedure specified in TABLE 1 shall be used.
All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE and REFERENCED 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 requirements of this Specification and Product Drawing, the Product Drawing shall take precedence. In the event of conflict between requirements of this Specification and referenced documents, this Specification shall take precedence.

2.1 Tyco Electronics Documents

- Product Drawings	Refer to TYCO Drawing N° 284937 and 284938
- TYCO Spec.	Application Spec 114-20117
- 109- series Test specifications	As indicated in TABLE 1
- 109-197series	Test specifications vs EIA and IEC Test Methods

2.2 Commercial and International Standard

- EIA-364	Electrical Connectors/Socket Test Procedures Including Environmental Classifications.

3. REQUIREMENTS

3.1 Design and Construction

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

3.2 Materials

Terminal: Materials used in the construction shall be as specified on the applicable product drawing.
Housing: Material and dimensions shall be as specified on the application spec 114-20117.

3.3 Definition

Insulation Displacement Connection (I.D.C.):
A terminating technique whereby a wire is forced into a restrictive slot in a terminal, during which time the wire insulation material is displaced, and the bare wire engages the sides of the slot.

3.4 Performance and Test Description

product is designed to meet the electrical, mechanical and environmental performance requirements specified in TABLE 1. Unless otherwise specified, all tests shall be performed at the following ambient environmental condition

- Temperature 20°C ±5°
- Relative humidity 30 ÷ 95 %
- Atmospheric pressure 860 ÷ 1060 mBar

3.5 Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Initial examination	Meets requirements of product drawing and application spec114-20117	EIA-364-18. Visual and dimensional inspection per product drawing
Final examination	Meets visual requirements	EIA-364-18. Visual inspection
ELECTRICAL		
Contact Resistance	See TABLE 3	IEC 60512-2-2 equivalent to TYCO spec 109-25 Specimens subjected to 100mA max. and 500mV max. open circuit voltage
Current Cycling	Termination resistance at specified test current. See TABLE 3	TYCO Spec 109-51 Condition A Method 2. Subject specimens to test current for wire size being tested for 50 cycles of 15 minutes ON and 15 minutes OFF. Read initially and final cycles.
MECHANICAL		
Retention force	90 N minimum	EIA 364-8 Determine retention force at a rate of 25.4 mm/minute
Durability Cycle	6 cycles (mating – unmating)	Subject specimens to requested cycles at a rate of 25,4 mm/min. Counterpart Faston LIF Rec. PN336236-3 must be used or equivalent.
ENVIROMENTAL		
Thermal shock	See note and TABLE 3	EIA 364-32 equivalent to TYCO spec 109-22 Subject specimens to 10 cycles between 21°C and 150°C
Humidity –temperature cycling.	See note	EIA-364-31B Method III - equivalent to TYCO Spec 109-23-3 Subject specimens to 10 cycles (10 days) between 25°C and 65°C at 80% to 100% RH

TABLE 1

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 TABLE 2

3.6 Product Qualification and Re-qualification test sequence.

Test or Examination	TEST Group		
	1	2	3
	Test Sequence (1)		
Initial examination	1	1	1
Contact Resistance	2,6	2,4	
Durability	3		
Current Cycling		3	
Retention force			2
Thermal shock	5		
Humidity –temperature cycling.	4		
Final examination	7	5	3

TABLE 2

NOTE (1) Numbers indicate sequence in which tests are performed.

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Specimen Selection
Specimens shall be prepared in accordance with applicable Instruction Sheet and/or Application specification and shall be selected at random from current production. All test groups shall each consist of at least of 10 specimens of each wire size.

B. Test Sequence
Qualification inspection shall be verified by testing specimens as specified in TABLE 2

4.2. Re-qualification Testing

If changes significantly affecting form, fit or function are made on the product or manufacturing process, a re-qualification testing is needed, consisting of all or part of the original testing sequence, as determined by development/product engineering.

4.3. Acceptance

Acceptance is based on verification that the product meets the requirements of TABLE 1. Failures attributed to equipment, test setup or operator improper operations 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 Tyco Electronic quality procedure and inspection plan will specify the sample acceptable quality level to be used.
Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.

4.5. Current Carrying capacity.

		Current Cycling	Thermal Shock- Humidity
Wire Size dia. (AWG- [mm])	Test Current (Amperes)	Bare copper wire MAX. Contact Resistance after Test (Final CR mΩ)	Bare copper wire MAX. Contact Resistance after Test (Final CR mΩ))
18 [1.02]	13	1.8	1.4
19 [0.91]	11	2.2	1.7
20 [0.81]	10	2.7	2.1
21 [0.72]	9	3.5	2.7
22 [0.65]	8	4.3	3.3
23 [0.57]	7	4.6	3.5
24 [0.51]	6	5.7	4.4
25 [0.46]	5	7.2	5.5
26 [0.40]	4	9.1	7.0
27 [0.36]	3.5	10.0	7.7
28 [0.32]	3	14.4	11.1
29 [0.29]	2.5	18.0	13.8
30 [0.25]	2	23.0	17.7
31 [0.23]	1.5	26.0	20.0
32 [0.20]	1	36.0	27.6
33 [0.18]	1	43.0	35.0
34 [0.16]	0.75	49.0	42.0
35 [0.14]	0.50	63.0	54.0
36 [0.13]	0.50	66.0	60.0

TABLE 3

4.5.1 Termination Resistance, Typical Measurement Point.
Below figures, represent a typical Measurement set-up.