

Product specification

1. Scope

This specification applies to HQ Insert Series heavy-duty connectors and defines the product performance requirements, test procedures and acceptance criteria.

Applicable Product Models: FHQ000 series.

2. Applicable Standards

The following documents form a part of this specification. 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 EN 61984: Connectors - Safety requirements and tests

2.2 IEC 60512: Connectors for electronic equipment -Test and measurement

2.3 IEC 60529: Degrees of Protection Provided by Enclosures (IP Code)

2.4 GB/T5095: Electromechanical components for electronic equipment — Basic testing procedures and measuring methods

2.5 GB/T2423: Environmental testing for electric and electronic products

3. Parameter Range

See drawing for details.

4. Appearance and Dimensions

4.1 Appearance: The product surface shall be free from defects, dirt, cracks and mechanical damage. Contacts shall be free from rust, oxidation or plating peeling.

4.2 Appearance and dimensions shall comply with the requirements of product drawings.

4.3 Exchangeable: Exchangeable with same specification products.

5. Materials

See drawing for details.

6. Test Requirements and Procedures Summary

Serial No.	Item	Test Method	Technical Requirements
1	Examination of Product	Visual inspection (IEC 60512-1-1/-2, Test 1a and 1b 6.2 of EN 61984)	Meet the drawing requirements, no damage or abnormality in visual appearance

Mechanical Characteristics			
2	Mechanical strength impact	Dropping height: 750mm for specimens of mass $\leq$ 250g 500mm for specimens of mass $>$ 250g Dropping cycles:8 positions in 45°step, one cycles per position (IEC 60512-7-2 Test 7b)	Connectors and internal insulation shall not sustain damage that impairs normal operation. Reduction of clearances and creepage distances is prohibited.
3	Durability	Mating cycles: 500 cycles Mating speed: 8~10 cycles per minute (GB/T 5095.5-1997 Test 9a)	Performance shall comply with drawing requirements; no damage or abnormal appearance.
Electrical Requirement			
4	Contact Resistance	Test current: 1A Measure points at the end of the termination (IEC 60512-2-2 Test 2b)	Contact resistance shall comply with drawing requirements.
5	Dielectric Voltage Withstand Test	Impulse test voltage according to Table 8, applied three impulses of each polarity and interval of at least 1s between impulses. (EN 61984 7.3.12)	No flashover or insulation breakdown
6	Insulation Resistance	Test voltage: 500V DC Test duration: 60s (GB/T 5095.2-1997 Test 3a Method B)	Insulation Resistance $\geq$ 10000M Ω
7	Earthing provisions	A power supply with open-circuit voltage not exceeding 12 V shall be used. A current of 1.5 times the rated current (maximum 25 A) shall be applied between the protective earth contact and each accessible metal part sequentially to measure the resistance. (EN 61984 Clause 7.3.1)	The resistance between accessible metal parts and protective earth contacts shall not exceed 0.1 Ω .

Environmental Performance			
8	Low temperature test	Test temperature: -40℃ Test duration: 2 h After test, recover for 2 h under ambient conditions before inspection. (GB/T 5095.6-1997 Test 11j)	Appearance: No damage; Contact resistance shall comply with drawing requirements.
9	High temperature test	Test temperature: 125℃. Test duration: 168 h. After test, recover for 2 h under ambient conditions before inspection. (GB/T 5095.6-1997 Test 11i)	
10	Temperature	Mate connector measure the temperature rise of contact when the maximum rated current is passed. (GB/T 5095.2-1997 Test 4a)	The sum of the ambient temperature and the temperature rise (ΔT) of a connector shall not exceed the upper limiting temperature