Product specification

1. Scope

This specification applies to the DIN 41612 connectors, specifying the product's performance indicators, test methods and test requirements.

Applicable Product Model: FES50803/FES50804 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 MIL-STD-1344 Testing method for Electrical Connectors
2.2 MIL-STD-202 Testing method for Electrical Connectors
2.3 EIA364 Testing method for Electrical Connectors
2.4 JIS C 0051 Testing procedure/method for electric equipment

3. Parameter Range

Parameter Name	Value & Unit
Rated Voltage	250V DC/AC
Rated Current	5.6 A
Operating Temperature	-55℃~+125℃(including terminal temperature rise)

4. Appearance and Dimensions

4.1 Appearance: Product surface without defect、dirt、crack、and mechanical damage, Contacts without rust; plating without oxidation and peeling

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

5. Materials

Component	Material Specification	Plating&Color
Housing	PBT (UL94V-0)	Natural/Gray
Terminal	Brass	Gold plated on contact area and tin plated on solder area, nickel under plated overall

6. Test Requirements and Procedures Summary

Serial No.	Item	Test Method	Technical Requirements
1	Examination of Product	Visual inspection	Meet the drawing requirements, no damage or abnormality in visual appearance
Electrical Requirement			

2	Dielectric Withstanding Voltage	Apply 1000V AC voltage between adjacent circuits of the unmated connector for 1 min	No flashover or insulation breakdown
3	Contact Resistance	Mate the connector, test with a low-power circuit (open-circuit voltage ≤20mV, short-circuit current ≤100mA)	Contact Resistance：20mΩ Max
4	Insulation Resistance	Apply 500 V DC voltage between adjacent circuits of the unmate connector for 1 min to test insulation resistance	Insulation Resistance：1000 MΩ Min
Mechanical Characteristics			
5	Mating Force	Measure the force required to mate connector, At a maximum rate of 12.5mm(0.492") per minute	120N Max
6	Unmating Force	Measure the force required to mate connector, At a maximum rate of 12.5mm(0.492") per minute	20N Min
7	Durability	Operation speed: maximum 10 times/min; durability cycle times: 500 times	Contact Resistance：30 mΩ Max
8	Vibration	Amplitude：1.52m; Frequency;10~55~10HZ; Vibration time:2 hours for 3 axistotal 6 hours.	Appearance: no damage; contact resistance: 30 mΩ Max; power-off time: 1 μs Max
9	Mechanical Shock	The connector is soldered on the printed circuit board; acceleration: 50 G; shock time: 11 ms（half-sine wave）; cycle times: 3 times for each X, Y, Z axis, total 9 times（JIS C0041/MIL-STD-202 Method 213）	
Environmental Performance			
10	Temperature Rising	Mating connectors shall be energized at rating current until thermal stability is achieved, and	Temperature rise: 30 ℃ Max

		then measured the temperature rise.	
11	Solder Ability	Immerse the tip of the solder tail and positioning pin into molten solder at (245±5) ℃, immersion depth to 0.1 mm from the bottom of the housing, for 4~5 s	Wettability: more than 95% of the immersed area has no voids, pinholes and missing solder
12	Thermal Shock	Temperature range: -55~+125 ℃; start from -55 ℃, keep constant temperature for 30 min, then switch to +125 ℃, transition time ≤30 s; total cycle times: 5 times	Appearance: no damage; contact resistance: 30 mΩ Max
13	Humidity-Temperature Cycle	Temperature (40±2) ℃, relative humidity 90~95% for 96 h; after the test, place the connector at room temperature for 1~2 h before testing (EIA-364-31A,Method Ⅱ,ConditionA)	Appearance: no damage; contact resistance: 30 mΩ Max; insulation resistance:1000 MΩ Min
14	Salt Spray	Salt concentration: 5%, temperature: (35±2) ℃, test time: (24±2) h; after the test, rinse residual salt with clean water, wipe dry before measurement (EIA-364-26A Condition A)	Appearance: no damage; contact resistance: 50 mΩ Max