

1.0 SCOPE

范围

1.1. CONTENT

内容

This specification covers product performance, test methods and quality requirements for DC EV charge gun, Applicable product descriptions and part numbers are as shown on product drawing. 本规格书规定了直流产品性能，测试方法及质量要求，适用的产品料号及产品描述详见产品图面。

1.2. Qualification 检测:

When tests are performed on the subject product line, procedures specified shall be used. All inspections shall be performed using the applicable inspection plan and product drawing. 当在产品线进行测试时，应按照指定的程序操作。所有的检验均应按照适用的检验计划和产品图纸来进行。

2.0 APPLICABLE DOCUMENTS

适用文件

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.

除非特别说明，本份文件所涉及的文档均应按照最新版本执行。当本份规格书要求和产品图纸有冲突时，应以产品图纸为准。当本份规格书要求和参考文件有冲突时，应以本规格书为准。

2.1 TE Connectivity Documents:

TE 文件

501-137188:

C-2271798:

3.0 REQUIREMENTS

要求

3.1 Design and Construction

设计及结构

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

产品应满足产品图纸上规定的设计、结构和物理尺寸要求。

3.2 Materials

材料

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

产品所使用的材料应满足产品图纸要求。

3.4 Ratings

A. Voltage: 750 VDC

电压: 直流750伏

B. Current: 125A, 250A

电流:125安, 250安

C. Operating Temperature: -30°C to 50°C

操作温度: -30°C 到 50°C

- D. Storage Environment: Temperature: - 5°C to 40°C Relative humidity: 15%-70%
 存储环境温度:- 5°C 到 40°C, 相对湿度: 15%-70%
- E. Protected degree: IP54/IP55
 防护等级: IP54/IP55

3.5 Performance and Test Description

性能及测试说明

Product is designed to meet the electrical, mechanical and environmental performance requirements. Unless otherwise specified, all tests shall be performed in the room temperature (-20°C~50°C), the average temperature not exceed 35°C in 24 H. Relative humidity (5~95%), air pressure (86~106kPa), and special case temperature (18~22°C), relative humidity (60~70%), unless otherwise specified.

所设计的产品应满足电气, 机械及环境的性能要求。除非特别说明, 所有的测试均应在以下条件下进行
 室温: -20°C~50°C, 24小时的平均温度不可超过35°C, 相对湿度: 5~95%, 大气压: 86~106kPa

除非特别说明, 特例温度为18~22°C, 相对湿度: 60~70%

3.6 Test Requirements and Procedures Summary

测试要求及汇总

3.6.1 EXAMINATION:

检查

Test Description 测试项目	Requirement 要求	Procedure 规定
Examination of the product 产品检查	Meets visual requirements. 目视	Visual inspection per product drawing. Per GB20234.1-2015 符合产品图纸要求

3.6.2 ELECTRICAL

电气

Test Description 测试项目	Requirement 要求	Procedure 规定
Insulation resistance. 绝缘电阻	5M Ω Min. 5 M Ω 最小	Unmated connector with 500 V DC between adjacent contacts for 1 min. Per GB/T 20234.1-2015 6.10/7.10 按照 GB/T 20234.1-2015 6.10/7.10 要求, 在配合后在产品相邻的端子上加 1 分钟 500 伏电压
Protection against electric shock 防触电保护	PE contact should be first touch and last break in mating/unmating process 在公母对配时, 接地端子应最先连接反之则接地端子最后断开	Subject specimens to do test Per GB/T 20234.1-2015 6.5/7.5 所做测试应满足 GB/T 20234.1-2015 6.5/7.5
Provision for earthing 接地措施	1530A,6s(125A rated current) 2450A,6s(250A rated current)	Subject specimens to do test Per GB/T 20234.1-2015 6.6/7.6 所做测试应满足 GB/T 20234.1-2015 6.6/7.6

Clearances , creepage distances and Penetration sealant distance 爬电距离, 电气间隙和穿透密封胶距离	Meet GB/T 11918.1-2014 section 26	Subject specimens to do test Per GB/T 20234.1-2015 6..17 所做测试应满足 GB/T 20234.1-2015 6.15
Dielectric withstanding Voltage 介电强度	No breakdown. 不击穿	Unmated connector with 3000 V AC between adjacent contacts for 1 min. Per GB/T 20234.1-2015 6.10/7.10 按照 GB/T 20234.1-2015 6.10/7.10 要求, 在相邻的端子间施加一分钟 3000V AC.
Breaking capacity 分断能力	No change to performance 产品性能没影响	Subject specimens to do test Per GB/T 20234.1-2015 6.11/7.11 产品应满足 GB/T 20234.1-2015 6.11/7.11 要求
Temperature Rising 温升	The temperature rise should be 50°C Max. 端子温升不超过50度	Mated connector measured at max rated current Per GB/T 20234.1-2015 6.13/7.13 产品应满足GB/T 20234.1-2015 6.13/7.13要求
Limited short withstand current 限制短路电流耐受试验	No physical damage, and meet requirements of additional tests specified in Product Qualification Test Sequence (Item 3.6.5) 无损坏, 满足产品功能	Subject specimens to do test Per GB/T 20234.1-2015 6.20/7.20 产品应满足 GB/T 20234.1-2015 6.20/7.20 要求

3.6.3 MECHANICAL

机械

Test Description	Requirement	Procedure
Locking strength 锁止装置	200 N min. 200N 最小	Measure the force Per GB/T 20234.1-2015 6.3/7.3 产品测试按照GB/T 20234.1-2015 6.3/7.3进行
Mating force 插入力	140 N Max. 140N 最大	Measure the force Per GB/T 20234.1-2015 6.4/7.4 产品测试按照GB/T 20234.1-2015 6.4/7.4进行
Unmating force 拔出力	140 N Max. 140N 最大	Measure the force Per GB/T 20234.1-2015 6.4/7.4 产品测试按照GB/T 20234.1-2015 6.4/7.4进行
Contact 端子	1. bend test 15 min. 25mm ² 4.5kgf 35mm ² 6.8kgf 70mm ² 10.4kgf 2. load test 1min. 25mm ² 135N 35mm ² 190N 70mm ² 285N	Subject specimens to do test Per GB/T 20234.1-2015 6.7/7.7 产品测试按照GB/T 20234.1-2015 6.7/7.7进行
Durability 使用寿命	No mechanical damage No change to performance 无损坏, 满足产品功能	Mating and unmating specimens for 10000 cycles by manual, Operation speed: (0.8±0.1) m/s Per GB/T 20234.1-2015 6.12/7.12 产品测试按照GB/T 20234.1-2015 6.12/7.12进行 插拔速度: (0.8±0.1) m/s 插拔次数: 10000次
Cable pull out force 电缆及其连接	Pull out force 100 cycles 施加拉力 100 次 125A 200N 250A 300N Torque 扭矩 125A 1.5N.m 250A 3N.m The cable displacement is less than 2mm 线的位移不超过 2mm.	Subject specimens to do test Per GB/T 20234.1-2015 6.14/7.14 产品测试按照GB/T 20234.1-2015 6.14/7.14进行

Mechanical strength 机械强度	No physical damage, and meet requirements of additional tests specified in Product Qualification Test Sequence (Item 3.6.5) 无损坏, 满足产品功能	Subject specimens to do test Per GB/T 20234.1-2015 6.15/7.15 产品测试按照GB/T 20234.1-2015 6.15/7.15进行
Screw, loading, connect 螺钉, 载流部件和连接	meet requirements of additional tests specified in Product Qualification Test Sequence 满足产品功能	Subject specimens to do test Per GB/T 20234.1-2015 6.16/7.16 产品测试按照GB/T 20234.1-2015 6.16/7.16进行
Vehicle rolling 车辆碾压	No mechanical damage No change to performance 无损坏, 满足产品功能	Subject specimens to do test Per GB/T 20234.1-2015 6.21/7.21 产品测试按照GB/T 20234.1-2015 6.16/7.16进行

3.6.4 Environmental

环境

Test Description	Requirement	Procedure
Rubber ,Resin ageing resistant 橡胶和热塑性材料的耐老化	No physical damage, and meet requirements of additional tests specified in Product Qualification Test Sequence (Item 3.6.5) 无损坏, 满足产品功能	Subject specimens in oven, Rubber: (70±2) °C for 240H Resin: (80±2) °C for 168H Per GB/T 20234.1-2015 6.8/7.8 产品测试按照GB/T 20234.1-2015 6.8/7.8进行 将橡胶及热塑性材料放入烘箱中 橡胶: (70±2) °C 放 240H Resin: (80±2) °C 放r 168H
Protection level 防护等级	No change to performance 满足产品功能	IP54 for EV charge gun with dust cap IP55 for mating specimens Per GB/T 20234.-2015 6.9/7.9 产品测试按照GB/T 20234.1-2015 6.9/7.9进行 带防尘盖IP54公母配合后: IP55
Thermal, flame-resisting Proof tracking 耐热, 阻燃和耐电痕化	No physical damage, and meet requirements of additional tests specified in Product Qualification Test Sequence (Item 3.6.5) 无损坏, 满足产品功能	Subject specimens to do test Per GB/T 20234.1-2015 6.18/7.18 产品测试按照 GB/T 20234.1-2015 6.18/7.18 进行
Corrosion resistance 耐腐蚀与防锈	No physical damage, and meet requirements of additional tests specified in Product Qualification Test Sequence (Item 3.6.5) 无损坏, 满足产品功能	Subject specimens to do test Per GB/T 20234.1-2015 6.19/7.19 产品测试按照GB/T 20234.1-2015 6.19/7.19进行

Remark: The text “No mechanical damage” means No structure is damaged/No connection becomes loose/The specimen still is fully functional in electricity after testing. The receptacle need to meet requirements of GB/T 20234.1-2105.

注意: 上文中的无损坏是指结构无破坏, 产品功能符合要求

与充电枪插头相配合的插座其性能应满足GB/T 20234.1-2015要求。

3.6.5 Product Qualification and Requalification Test Sequence (Sample Size: 1pcs for each group)

产品验证及测试顺序（样品数量：每组1pcs）

Test group 测试项目	1	2	3	4	5	6	7
Examination of product 产品检查	1,13	1,5	1,4	1,6	1,3	1,5	1,3
Insulation resistance.绝缘电阻	8			2,7		2,6	
Protection against electric shock 防触电保护	5						
Provision for earthing 接地措施	6			4			
Clearances , creepage distances and Penetration sealant distance 爬电距离, 电气间隙和穿透密封胶距离						8	
Dielectric withstanding Voltage 介电强度	9			3,8		3,7	
Breaking capacity 分断能力			2				
Temperature Rising 温升		3					
Limited short withstand current 限制短路电流耐受试验					2		
Locking strength 锁止装置	2						
Mating force 插入力	3						
Unmating force 拔出力	4						
Contact 端子							2
Durability 使用寿命	10						
Cable pull out force 电缆及其连接			3				
Mechanical strength 机械强度				5			
Screw, loading, connect 螺钉, 载流部件和连接	11						
Vehicle rolling 车辆碾压						4	
Rubber ,Resin ageing resistant 橡胶和热塑性材料的耐老化		2					
Protection level 保护等级	7						
Thermal, flame-resisting Proof tracking 耐热, 耐燃和耐电痕化	12						
Corrosion resistance 耐腐蚀和防锈		4					

4.0 Quality Assurance Provisions 品质保证规定

4.1 Qualification Testing 资质测试

A. Specimen Selection 样品选择

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. 试样应符合产品说明书并随机从目前生产的产品中选取

B. Test Sequence 测试顺序

Qualification inspection shall be verified by testing specimens as specified.
资质检测应由所指定的样品进行验证

4.2. Requalification Testing 重新认证测试

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.
如果产品外观，产品组装及功能有明显改变，则产品应做相应的资质测试，测试内容及顺序有工程及品质共同确定。

4.3. Acceptance 验收

Acceptance is based on verification that the product meets the requirements. 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 resubmitted.

产品符合要求则通过验收。如果因测试设备，测试设置或操作原因导致的测试失败，则不得取消该产品的认证资质。如果测试失败，则应在采取改善措施后重新提交样品进行测试。

4.4. Quality Conformance Inspection 品质一致性检验

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.

产品品质检验计划应规定抽样质量水准。产品尺寸和功能应符合产品图纸及本规范。