Test Report

Client Name	:	Shenzhen Southking Technology Co., LTD(Shenzhen) Tech Co., Ltd.
Address	:	2nd Floor.1 Building. No. 596. Zhoushi Road, Xixiang Street, Baoan District, Shenzhen City. Guangdong Province, China
Product Name	:	EV-quick charger
Date	:	2019.5.24

Shenzhen Anbotek Compliance Laboratory Limited

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Marking

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3. The test report is invalid without the signatures of testing engineer, reviewer and approver.
4. The test report is invalid if altered.
5. Objections to the test report must be submitted to Shenzhen Anbotek Compliance Laboratory Limited within 15 days.
6. The test report is valid for the tested samples only.
7. As for test verdict, “—”means “no need for judgment” “N/A” means “not applicable”.

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Report No.:SZAEK190515007-01

TEST REPORT

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Report on the submitted sample(s) said to be:

Product Name	:	EV-quick charger
Model	:	SK-EV16
Trademark	:	/
Description	:	/
Manufacturer	:	Shenzhen Southking Technology Co., LTD(Shenzhen) Tech Co., Ltd.
Factory	:	/
Other information	:	/
Sample(s) received Date	:	2019.5.15
Testing period	:	2019.5.17 - 2019.5.20
Report Date	:	2019.5.24

Test item	:	IP66
Test standard	:	IEC 60529:2013
Evaluation	:	Pass

Prepared by:	**Checked by:**	**Approved by:**
Jarvan Zheng	Jimmy Zhou	Mike Jiang
Name: Jarvan Zheng	Name: Jimmy Zhou	Name: Mike Jiang
Title: Test Engineer	Title: Lab Manager	Title: Authorized Signatory

Anbotek (SZ) Compliance Laboratory Limited * Approved *

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1. Test standards

IEC 60529:2013 Degrees of protection provided by enclosures(IP Code)

2. Conformity verification-Summary of inspection

Clause	Summary of inspection	Test result		
		N/A.	Pass	Fail
12	TESTS FOR PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL	☐	☑	☐
13	TESTS FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL.	☐	☑	☐
14	TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL.	☐	☑	☐

Test case verdicts:

N/A.: Test case does not apply to the test object

P: Test item does meet the requirement

F: Test item does not meet the requirement

2.1 Environmental Conditions :

Environmental Temperature：15℃~35℃

Relative Humidity：25%~75%

Pressure：86kpa~106kpa

2.2 Test equipment :

Equipment Name	Equipment No.	Model	Validity Period
IP Tester D	SE-1398	IP4X	2019.08.21
Dust proof box	SE-1152	GR-IPPCA01	2019.09.10
Water proof test system	SE-264	IPX5-6	2019.08.24

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3. Test information and results

IEC 60529:2013		
Clause	Requirement-Test	Verdict

11.4	Combination of test conditions for the first characteristic numeral		
	Designation with a first characteristic numeral implies that all test conditions are met for this numeral.		

Table 5	First characteristic number	Test for protection against		-
		Access to hazardous parts	Solid foreign objects	-
	0	No test required	No test required	N/A
	1	The sphere of 50mm ϕ shall not fully penetrate and adequate clearance shall be kept		N/A
	2	The jointed test finger may penetrate up to its 80 mm length, but adequate clearance shall be kept	The sphere of 12.5mm ϕ shall not fully penetrate	N/A
	3	The test rod of 2.5 mm ϕ shall not penetrate and adequate clearance shall be kept		N/A
	4	The test wire of 1.0mm ϕ shall not penetrate and adequate clearance shall be kept		N/A
	5	The test wire of 1.0 mm ϕ shall not penetrate and adequate clearance shall be kept	Dust-protected as specified in table 2	N/A
	6	The test wire of 1.0 mm ϕ shall not penetrate and adequate clearance shall be kept	Dust-tight as specified in table 2	P
	In the case of the first characteristic numerals 1 and 2, “not fully penetrate” means that the full diameter of the sphere shall not pass through an opening of the enclosure.			-

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IEC 60529:2013			
Clause	Requirement-Test	Result-Remark	Verdict

13	**TESTS FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL**			-
13.1	Test means			-
	Test means and the main test conditions are given in Tab.7.			-
	Tab.VII-7 Test means for the tests for protection against solid Foreign objects			-
Table 7	First characteristic numeral	Test means	Test force	-
	0	No test required	-	N/A
	1	Rigid sphere without handle or guard 50mm diameter	50 N ± 10 %	N/A
	2	Rigid sphere without handle or guard 12.5mm diameter	30 N ± 10 %	N/A
	3	Rigid steel rod 2.5mm diameter with edges free from burrs	3 N ± 10 %	N/A
	4	Rigid steel rod 1mm diameter with edges free from burrs	1 N ± 10 %	N/A
	5	Dust chamber Fig.2,with or without underpressure	-	N/A
	6	Dust chamber Fig.2,with underpressure	-	P
13.2	Test conditions for first characteristic numerals 1, 2, 3, 4			-
	The object probe is pushed against any openings of the enclosure with the force specified in table 7.			N/A
13.3	Acceptance conditions for first characteristic numerals 1, 2, 3, 4			-
	The protection is satisfactory if the full diameter of the probe specified in table 7 does not pass through any opening.			N/A

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IEC 60529:2013			
Clause	Requirement-Test	Result-Remark	Verdict
13.4	Dust test for first characteristic numerals 5 and 6		-
	The test is made using a dust chamber incorporating the basic principles shown in figure 2 whereby the power circulation pump may be replace by other means suitable to maintain the talcum powder in suspension in a closed test chamber. The talcum powder used shall be able to pass through a square-meshed sieve the nominal wire diameter of which is 50 and the nominal width of a gap between wires 75μm . The amount of talcum powder to be used is 2Kg per cubic metre of the test chamber volume. It shall not have been used for more than 20 tests.		P
	Enclosures are of necessity in one of two categories: Category1: Enclosures where the normal working cycle of the equipment causes reductions in air pressure within the enclosure below that of the surrounding air, for example, due to thermal cycling effects. Category 2:Enclosures where no pressure difference relative to surrounding air is present.		-
	Category 1 enclosures: The enclosure under test is supported inside the test chamber and the pressure inside the enclosure is maintained below the surrounding atmospheric pressure by a vacuum pump.The suction connection shall be made to a hole specially provided for this test. A volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour. In no event shall the depression exceed 2 kPa(20 mbar) on the manometer shown in figure 2.		P
	Category 2 enclosures: The enclosure under test is supported in its normal operating position inside the test chamber, but is not connected to a vacuum pump. Any drain-hole normally open shall be left open for the duration of the test.The test shall be continued for a period of 8h.		N/A

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IEC 60529:2013			
Clause	Requirement-Test	Result-Remark	Verdict
13.5	Special conditions for first characteristic numeral 5		-
13.5.1	Test conditions for first characteristic numeral 5	First characteristic numeral is 5	-
	The enclosure shall be deemed category 1 unless the relevant product standard for the equipment specifies that the enclosure is category 2.		N/A
13.5.2	Acceptance conditions for first characteristic numeral 5	First characteristic numeral is 5	-
	The protection is satisfactory if, on inspection, talcum powder has not accumulated in a quantity or location such that, as with any other kind of dust, it could interfere with the correct operation of the equipment or impair safety. Except for special cases to be clearly specified in the relevant product standard, no dust shall deposit where it could lead to tracking along the creepage distances .		N/A
13.6	Special conditions for first characteristic numeral is 6		-
13.6.1	Test conditions for first characteristic numeral is 6	First characteristic numeral is 6	-
	The enclosure shall be deemed category 1, whether reductions in pressure below the atmospheric pressure are present or not		P
13.6.2	Acceptance conditions for first characteristic Numeral 6	First characteristic numeral is 6	-
	The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.		P

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IEC 60529:2013			
Clause	Requirement-Test	Result-Remark	Verdict

14	**TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL**					
14.1	Test means					-
	The test means and the main test conditions are given in the table 8					-
	Table 8 Test means and main test conditions for the tests for Protection against water					-
	Second Characteristic numeral	Test means	Water flow rate	Duration of test	Test conditions	-
	0	No test required	-	-	-	N/A
	1	Drip box Fig.3 Enclosure on turntable	1 mm/min	10 min	14.2.1	N/A
	2	Drip box Fig.3 Enclosure in 4 fixed positions of 15°tilt	3 mm/min	2.5 min for each position of tilt	14.2.2	N/A
	3	Oscillating tube Fig.a Spray ±60°from vertical, distance max.200mm or Spray nozzle Fig.5 Spray ±60°from vertical	0.07L/min ±5% per hole, multiplied by Number of holes 10L/min ±5%	10min 1 min/m^2 at least 5 min	14.2.3a) 14.2.3b)	N/A
	4	As for numeral 3 Spray ±180° from vertical	As for numeral 3	As for numeral 3	14.2.4	N/A
	5	Water jet hose Nozzle Fig.6 Nozzle 6.3mm diameter,distance 2.5m to 3m	12.5L/min ±5%	1 min/m^2 at least 3 min	14.2.5	N/A
	6	Water jet hose Nozzle Fig.6 Nozzle 12.5mm diameter,distance 2.5m to 3m	100L/min ±5%	1 min/m^2 at least 3 min	14.2.6	P

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	7	Immersion tank Water-level on Enclosure:0.15m above top 1m above bottom	-	30min	14.2.7	N/A
	8	Immersion tank Water-level:by agreement	-	by agreement	14.2.8	N/A
	9	Fan jet nozzle Figure 7 Test of small enclosure on turntable Figure12 Turntable speed (5±1)r/min Spray at 0°, 30°, 60°, 90° Or Test of large enclosures as per intended use Spray from all practical directions Distance (175±25)mm	(15±1)L/min	30s per position 1min/m² at least 3 min	14.2.9(a) 14.2.9(b)	N/A
14.2.6	Test for second characteristic numeral 6					-
	Nozzle diameter : 12.5 mm ; Distance : 2.5 m to 3 m ; Water flow rate :（100 ± 5%）L/min ; Test time : at least 3 min ;					P

4.Test result:

Sample No.	Test Item	Test requirements	Test result	Evaluation
SZAEK190515007-S1	IP6X	There is no dust enter the sample inside and The test wire of 1.0 mm Φ shall not penetrate the sample inside.	There is no dust enter the sample inside and the test wire of 1.0 mm Φ shall not penetrate the sample inside. The function is normal after test.	Pass
SZAEK190515007-S2	IPX6	There is no water enter the sample inside or the water inside does not affect the electrical properties of the sample.	There is no water enter the sample inside. The function is normal after test.	Pass

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5. Photos



IP6X-Before test



IP6X-Before test

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IP6X-Test set-up



IP6X-Test set-up

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IP6X-After test



IP6X-After test

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IPX6-Before test



IPX6-Before test

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IPX6-Test set-up



IPX6-After test

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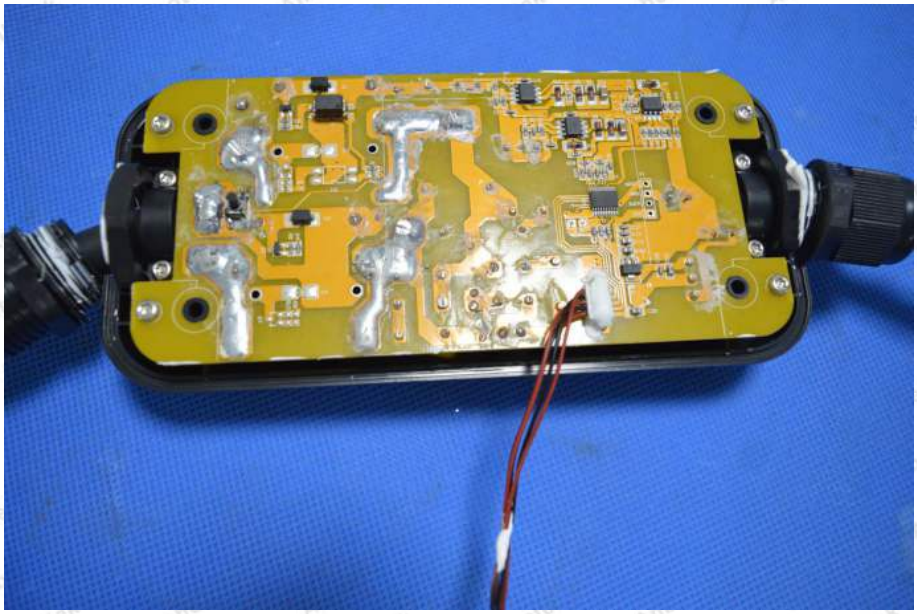
IPX6-After test



IPX6-After test

End of Report

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