

Environmental Commission Test Report

FOR

Applicant	:	Shenzhen Davo Electronic Co., Ltd.
Address	:	B #608. Chuangzaoli technology Building, No. 102 XingHua Road, FuYong Street, Bao'an District, Shenzhen City, Guangdong Province, China
Equipment Under Test	:	Waterproof Metal Keyboard
Model No.	:	D-8988
Test Items	:	IP68 Test
Test Date	:	2019/11/22~2019/11/25
Sample Quantity	:	1 PCS
Testing Laboratory	:	Dongguan Dongdian Testing Service Co., Ltd.
Address	:	No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan
City, Guangdong Province, China, 523808

Tel: 0769-38826678 <http://www.ddttest.com>

REPORT

Environmental Commission Test Report

Product Description	Waterproof Metal Keyboard	Trademark	
Model Type	D-8988	Sample Grade	/
Client	Shenzhen Davo Electronic Co., Ltd.	Sample Delivery Method	Enterprise Sample
Address	B #608. Chuangzaoli technology Building, No. 102 XingHua Road, FuYong Street, Bao'an District, Shenzhen City, Guangdong Province, China	Laboratory Ambient Temperature	22.6~23.1 °C
Testing Laboratory	Dongguan Dongdian Testing Service Co., Ltd.	Laboratory Ambient Humidity	49.8~51.6 % RH
Sample Quantity	1 PCS	Test Date	2019/11/22 ~2019/11/25
Specification	GB/T 4208-2017		
Conclusion	PASS		

Tested by:  2019/11/28	Review by:  2019/11/28	Approved by:  2019/11/28
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Important :

This report is only responsible for the sample. The report has no invalid official seal, the report is invalid, and the report is invalid. If there is any objection to the test report, please submit it to the testing unit within 15 days from the date of receipt of the report.

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1. Summary Of Test Results

S/N:	Test Items	Reference Standard	Product Model When Testing	Sample NO.	Test Results
1	IP6X Test	GB/T 4208-2017	NA	#1	PASS
2	IPX8 Test	GB/T 4208-2017	NA	#1	PASS

2. IP6X Test

2.1. Test Equipment

S/N:	Equipment Name	Model	Equipment Serial Number	Calibration Due
1	Sand And Dust Test Chamber	KP501	KP20180622101	2020/05/10

2.2. Test Conditions

Test Criteria	GB/T 4208-2017
Test Procedure	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. If not otherwise specified in the relevant product standard, this hole shall be in the vicinity of the vulnerable parts. If it is impracticable to make a special hole, the suction connection shall be made to the cable inlet hole. If there are other holes (for example, more cable inlet holes or drain-holes) these shall be treated as intended for normal use on site. The object of the test is to draw into the enclosure, by means of depression, 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. If an extraction rate of 40 to 60 volumes per hour is obtained the duration of the test is 2 h. If, with a maximum depression of 2 kPa (20 mbar), the extraction rate is less than 40 volumes per hour, the test is continued until 80 volumes have been drawn through, or a period of 8 h has elapsed.
Sample Quantity	1 PCS
Requirements	The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.

2.3. Test Results

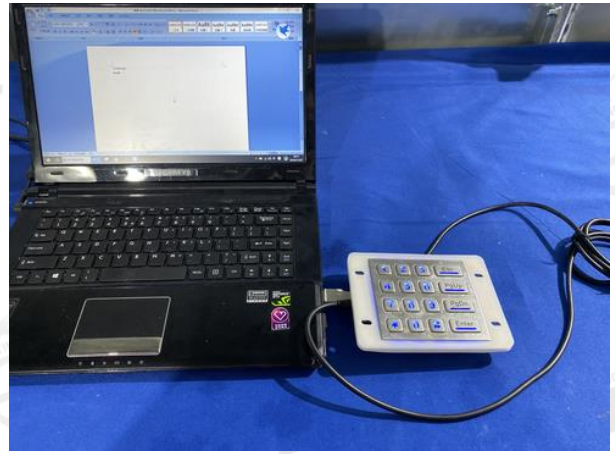
Before the test, the appearance and function of the sample is normal.

After the test, the appearance and function of the sample is normal. A dust-in phenomenon was found inside the disassembly inspection, but it did not affect the normal operation of the equipment or damage the safety (see 2.4.3 After the Test Photos for details). Meet the test requirements.

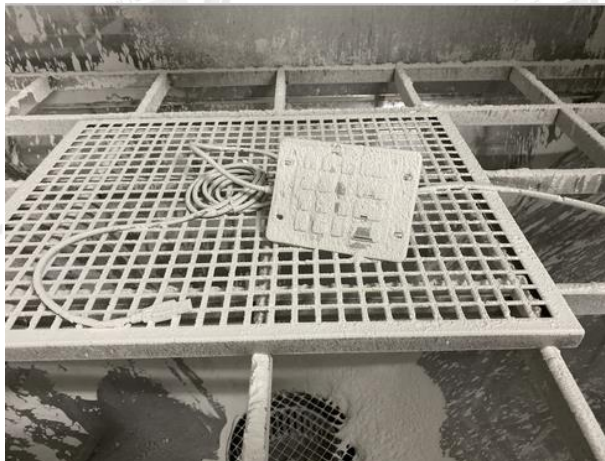
Note: During the test, the extraction rate of 40 to 60 volumes per hour is obtained the duration of the test is 2 h.

2.4. Test Photos

2.4.1. Before The Test Photos



2.4.2. Test Photos



2.4.3. After The Test Photos





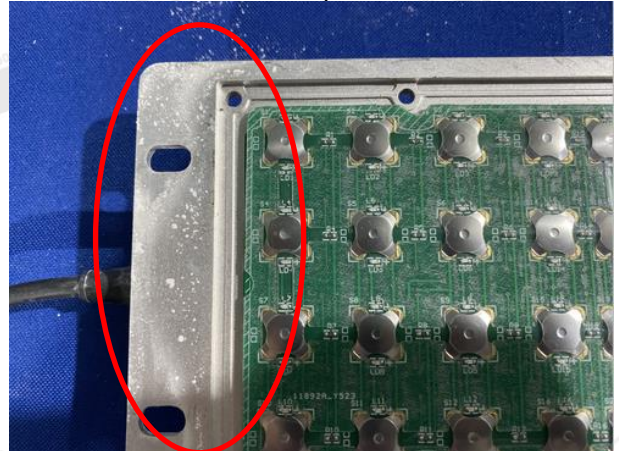
Internal inspection 1



Internal inspection 2



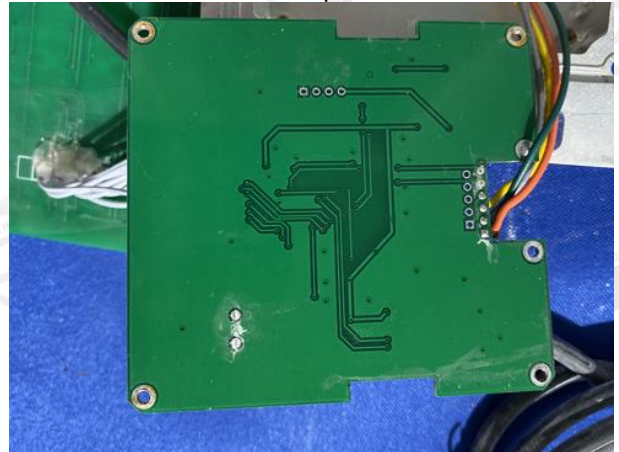
Internal inspection 3



Internal inspection 4



Internal inspection 5



Internal inspection 6

3. IPX8 Test

3.1. Test Equipment

S/N:	Equipment Name	Model	Equipment Serial Number	Calibration Due
1	IPX8 Pressure Immersed Water Test	IPX8	GR18120501	2020/06/30

3.2. Test Conditions

Test Criteria	GB/T 4208-2017
Test Procedure	The tested shells are completely immersed in water according to the installation state specified by the manufacturer, and meet the following conditions: a) The sample is 5000mm below the water surface; b) the test duration is 3h; c) The difference between water temperature and sample temperature is not greater than 5K. If the sample needs to be tested while it is charged and / or in operation, the relevant standards may specify other requirements.
Sample Quantity	1 PCS
Requirements	It is the responsibility of the relevant technical committee to specify the amount of water which may be allowed to enter the enclosure and the details of a dielectric strength test, if any. In general, if any water has entered, it shall not: - be sufficient to interfere with the correct operation of the equipment or impair safety; - deposit on insulation parts where it could lead to tracking along the creepage distances; - reach live parts or windings not designed to operate when wet; - accumulate near the cable end or enter the cable if any. If the enclosure is provided with drain-holes, it should be proved by inspection that any water which enters does not accumulate and that it drains away without doing any harm to the equipment. For enclosures without drain-holes, the relevant product standard shall specify the acceptance conditions if water can accumulate to reach live parts.

3.3. Test Results

Before the test, the appearance and function of the sample is normal.

After the test, the appearance and function of the sample is normal. Water disintegration is found inside the disassembly inspection, but it did not affect the normal operation of the equipment or damage the safety (see 3.4.3 After The Test Photos for details). Meet the test requirements.

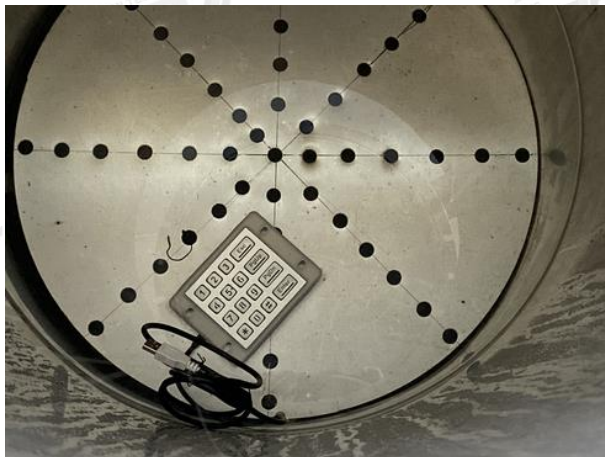
Note: The IPX8 pressure immersion tester digital pressure gauge can convert 10m water depth to 1Kg or 0.1Mpa, then the test condition of 5m water depth is displayed as 0.05Mpa on the digital pressure gauge.

3.4. Test Photos

3.4.1. Before The Test Photos



3.4.2. Test Photos



Sample placement



overall arrangement



Test setup 1



Test setup 2

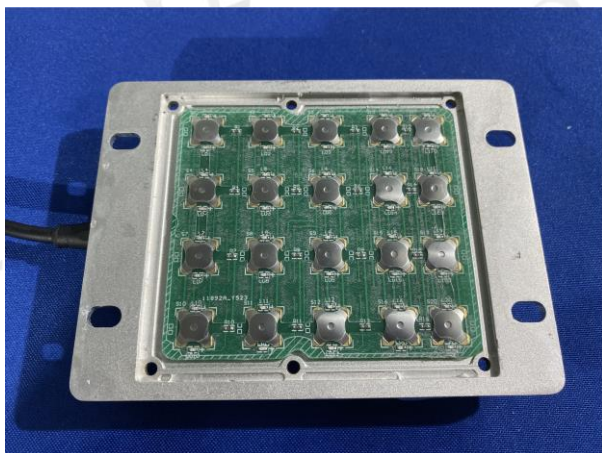
3.4.3. After The Test Photos



Internal inspection 1



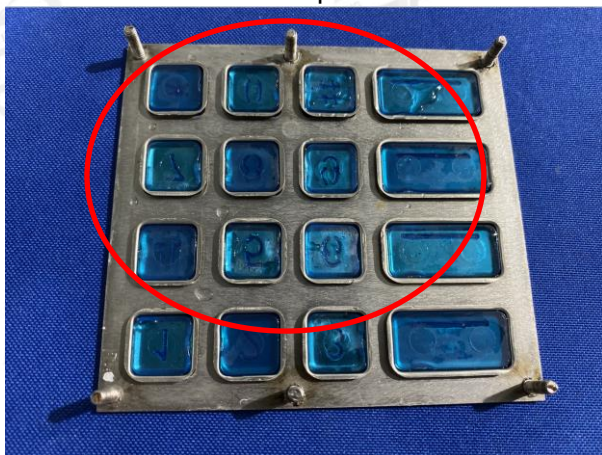
Internal inspection 2



Internal inspection 3



Internal inspection 4



Internal inspection 5



Internal inspection 6

----- End Report -----