

TEST REPORT

Report No.:	200502010SHA -001
Date of Issue:	2020-06-08
Applicant Name:	Hangzhou Weiguang Electronic Co., Ltd.
Applicant Address:	No.365,366, Xingzhong Road, Yuhang Region, Hangzhou, Zhejiang
Buyer / Trade Mark:	Not Provided
Sample Description:	Electronically Commutated Motor
Model No. of Manufacturer:	ECM7112AAA2DA411
Supplier/Vendor/Manufacture:	Not Provided
Technical Data:	220-240V~, 50/60Hz, 24W, 1300r/min
Service Requested:	IP65 Dust & Water Proof Test
Service Specification:	IEC 60529:1989+A1:1999+A2:2013
Date of Sample Receive:	2020-05-25
Date of Sample Test:	2020-05-25 ~ 2020-06-08
Previous Report No. (if re-test):	NA
Remark:	NA

Conclusion :	PASS
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Prepared and checked by:



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Reviewed by



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- Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.



Test Items	Test Method	Requirement / Limit	Measurements	Results
Dust Proof Test (IP6X)	IEC 60529 Cls.13.4	<p>The test is made using a dust chamber incorporating the basic principles shown in figure 2 whereby the powder circulation pump may be replaced 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 50µm and the nominal width of a gap between wires 75µm. The amount of talcum powder to be used is 2 kg per cubic metre of the test chamber volume. It shall not have been used for more than 20 tests.</p> <p>Enclosures are of necessity in one of two categories: Category 1: 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 the surrounding air is present.</p> <p>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. 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.</p>	Complied	P

		<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 8 h.</p> <p>Category 1 and category 2 enclosures: If it is impracticable to test the complete enclosure in the test chamber, one of the following procedures shall be applied:</p> <ul style="list-style-type: none"> – testing of individually enclosed sections of the enclosure; – testing of representative parts of the enclosure, comprising components such as doors, ventilation openings, joints, shaft seals, etc., in position during test; – testing of a smaller enclosure having the same full-scale design details. <p>The enclosure shall be deemed category 1, whether reductions in pressure below the atmospheric pressure are present or not.</p> <p>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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Water Proof Test (IPX5)	IEC 60529 Cls.14.2.5	<p>The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown in figure 6.</p> <p>The conditions to be observed are as follows:</p> <ul style="list-style-type: none"> – internal diameter of the nozzle: 6,3 mm; – delivery rate: 12,5 l/min \pm 5 %; – water pressure: to be adjusted to achieve the specified delivery rate; – core of the substantial stream: circle of approximately 40 mm diameter at 2,5 m distance from nozzle; – test duration per square metre of enclosure surface area likely to be sprayed: 1 min; – minimum test duration: 3 min; – distance from nozzle to enclosure surface: between 2,5 m and 3 m. <p>After testing, the enclosure shall be inspected for ingress of water.</p> <p>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.</p> <p>In general, if any water has entered, it shall not:</p> <ul style="list-style-type: none"> – 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. <p>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.</p> <p>For enclosures without drain-holes, the relevant product standard shall specify the acceptance conditions if water can accumulate to reach live parts.</p>	Complied	P
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P: PASS

NA: Not Available

F: FAIL

Appendix

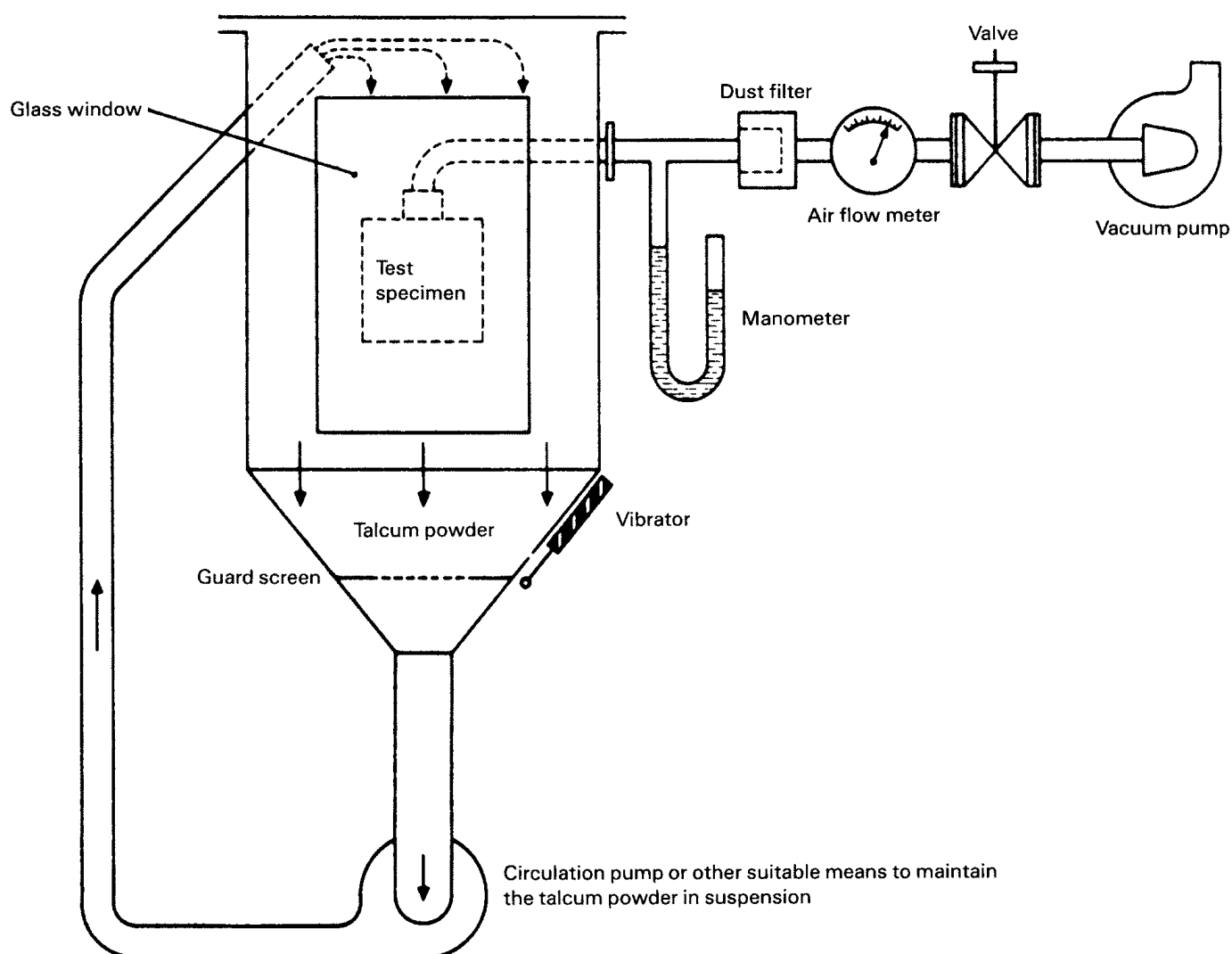
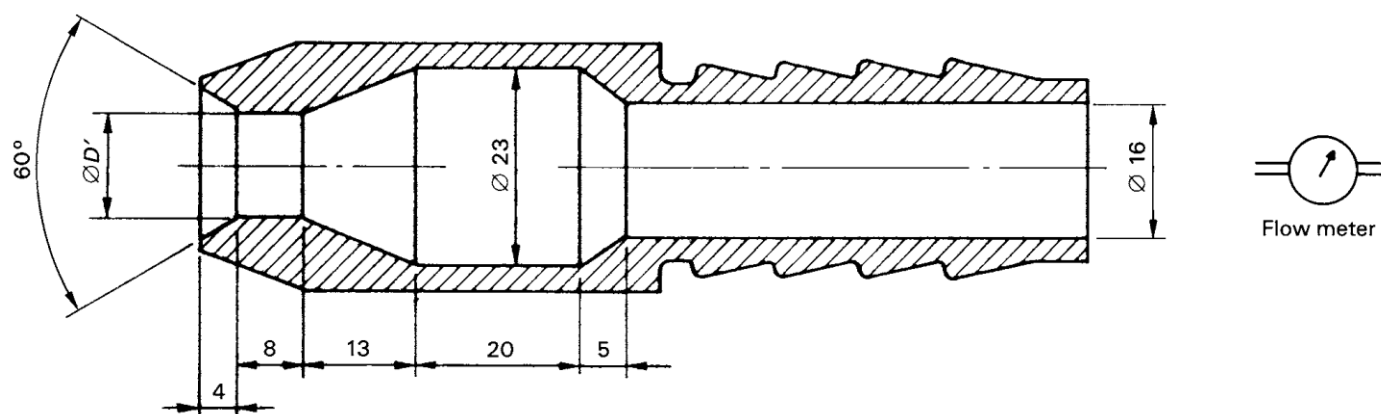


Figure 2 – Test device to verify protection against dust (dust chamber)



$D' = 6,3$ for the test of 14.2.5 (second characteristic numeral 5)

Figure 6 – Test device to verify protection against water jets (hose nozzle)

Product Photos



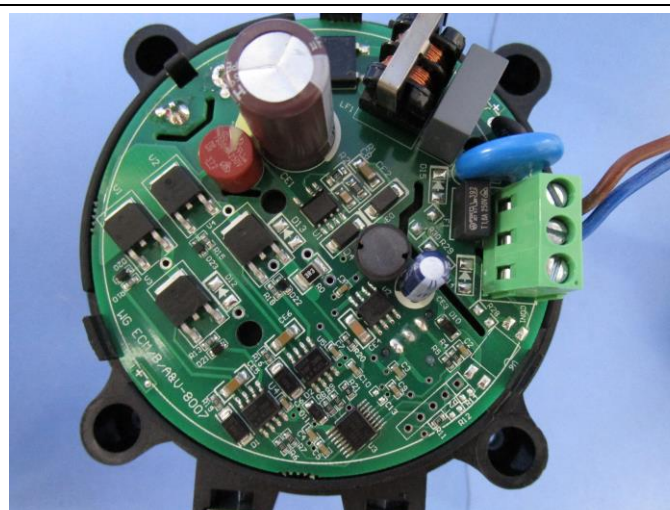
#1 Overall view



#2 Side view



#3 Label



#4 PCB



#5 Winding