



TEST REPORT

Report No...... : WTS18D05111814X1S
Applicant..... : TOMUU Actuator Technology Co., Ltd.
Address..... : Shengyao Industrial Park, Dongguan city, Guangdong province, China
Manufacturer..... : TOMUU Actuator Technology Co., Ltd.
Address..... : Shengyao Industrial Park, Dongguan city, Guangdong province, China
Brand..... : --
Product Name..... : Linear Actuator
Model No...... : U10 Series
Ratings..... : --
Standards..... : IEC60529:1989+A1:1999+A2
Test Category..... : Entrusted Test
Test Item..... : IP66 Test
Date of Receipt sample..... : 2018-05-16
Date of Test..... : 2018-05-16 to 2018-05-18
Date of Issue..... : 2018-05-22
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp for test institute and the signatures of reporter and reviewer.

Prepared By:

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Jackson Zhong/Manager

**List of test items:**

No.	Test Items	Requirement + Test	Result
1	IP66 Test	IEC60529:1989+A1:1999+A2	Pass
<input checked="" type="checkbox"/> The product fulfils the requirements of EN60529:1991+ A1:2000+A2:2013			
Subcontract Whether parts of tests for the product have been subcontracted to other labs: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, list the related test items and lab information: Test items: -- Lab information: --			
Remarks: 1. Requested by client, all test base on the sample in a stationary state (see photo for details). 2. All models in U10 series are with similar construction.			



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**Test Item:**

Tests for protection against dust-proof: IP6X

Test Method:

The tests should be carried out under the standard atmospheric condition.

The atmospheric conditions during tests are as follows:

Temperature range: 15°C to 35°C. Relative humidity: 25% to 75%.

The test is made using a dust chamber incorporating the basic principles shown in figure 2 where by 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 gap between wires 75 µm. The amount of talcum powder to be used is 2 kg per cubic meter of the test chamber volume. It shall not have been used for more than 20 tests.

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.

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. In no event shall the depression exceed 2 KPa(20mbar) 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 2h. 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 8h has elapsed.

Category 2: Enclosures where no pressure difference relative to the surrounding air is present.

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.

The enclosure shall be deemed category 1, whether reductions in pressure below the atmospheric pressure are present or not.

The test wire of 1.0 mmφ insert into any openings of the enclosure with a force of $1N \pm 10\%$.

Acceptance Conditions:

The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.

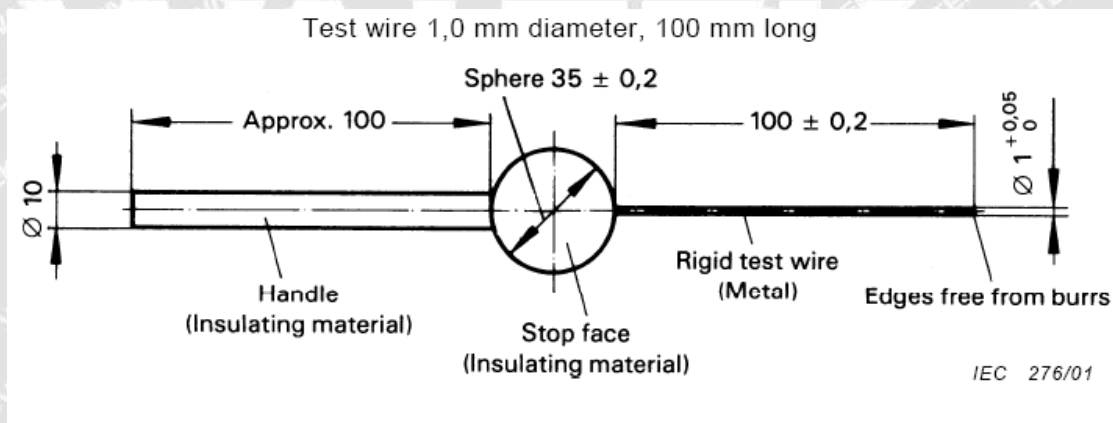
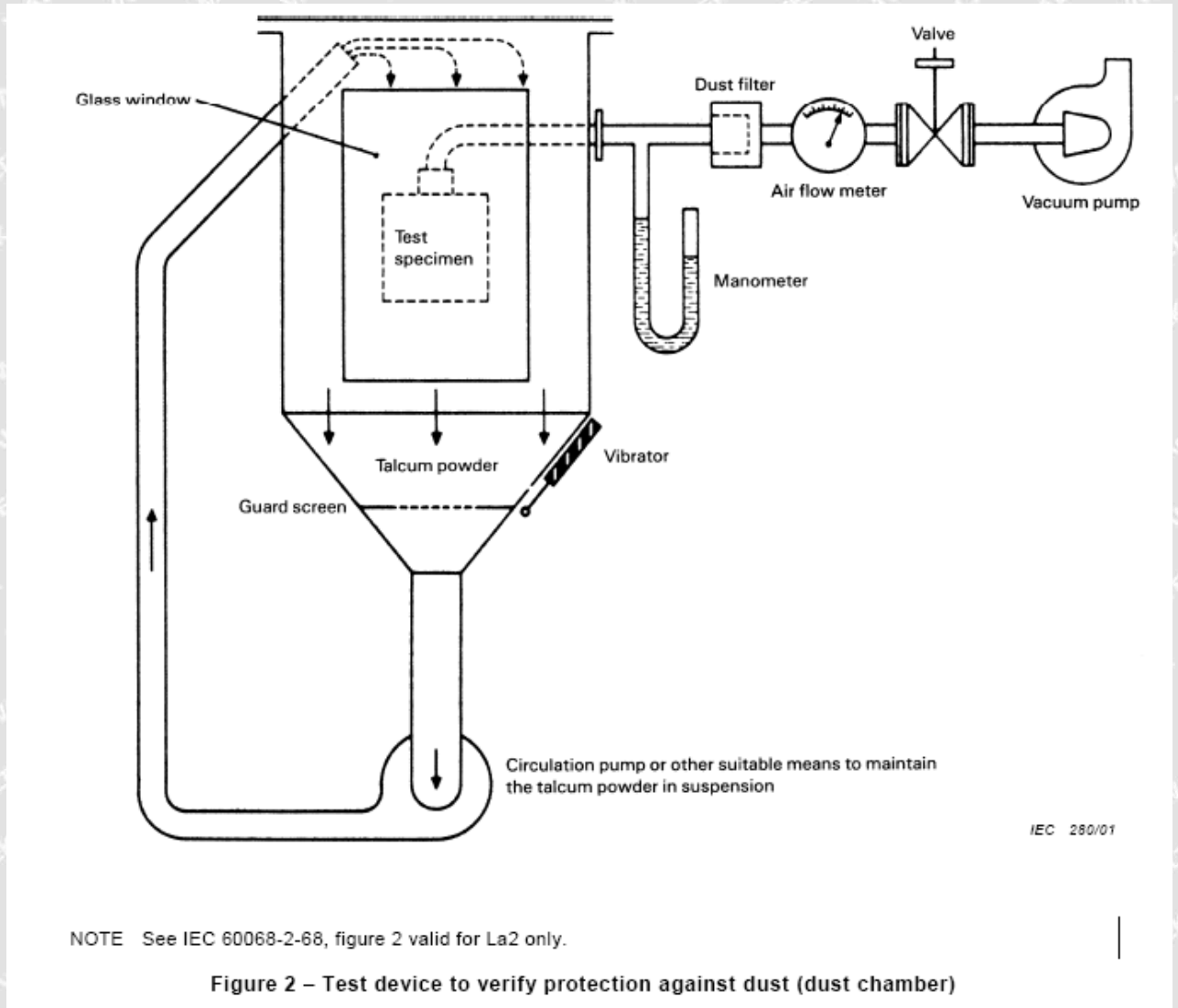
The protection is satisfactory if adequate clearance is kept between the access probe and hazardous parts.

The protection is satisfactory if the access probe 1.0 mm diameter shall not pass through the any opening.

Test Result:

Pass Fail

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**Test Item:**

Tests for protection against ingress moisture: IPX6

Test Method:

The tests should be carried out under the standard atmospheric condition.

The atmospheric conditions during tests are as follows:

Temperature range: 20°C to 30°C.

The tests are conducted with fresh water.

Jet-proof luminaires (second characteristic IP numeral 6) are switched off and 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 8.

The conditions to be observed are as follows:

-internal diameter of the nozzle: 12.5 mm;

-delivery rate: 100 l/min \pm 5 %

-water pressure: to be adjusted to achieve the specified delivery rate;

-core of the substantial stream: circle of approximately 120 mm diameter at 2.5 m distance from nozzle;

-Test duration per square metre of enclosure surface area likely to be sprayed: 1 min;

-test duration: 3 min

-Distance from nozzle to enclosure surface: between 3 m.

Before the tests for the second characteristic numeral, with the exception of IPX8, the luminaire complete with lamp(s) shall be switched on and brought to a stable operating temperature at rated voltage.

Test water for the tests shall be at a temperature of 15°C \pm 10°C.

Luminaires shall be mounted and wired as in normal use and placed in the most unfavourable position, complete with their protective translucent covers, if any, for the tests of IP.

Where connection is made by a plug or a similar device, then this shall be regarded as part of the complete luminaire and shall be included in the tests and similarly for any separate Controlgear.

For tests of IPX1 to IPX8, a fixed luminaire intended for mounting with its body in contact with a surface shall be tested with an expanded metal spacer interposed between the luminaire and the mounting surface.

Luminaires having provision for draining water by means of drain holes shall be mounted with the lowest drain hole open unless otherwise specified in the manufacturer's installation instructions.

For recessed luminaires, the parts in the recess and the parts protruding from the recess shall each be tested according to their IP classification as indicated in the manufacturer's mounting instructions.

NOTE A box encapsulating the part in the recess may be necessary for the test of IPX3 to IPX8.

Portable luminaires, wired as in normal use, shall be placed in the most unfavourable position of normal use.

Glands, if any, shall be tightened with a torque equal to two-thirds of that applied to glands in the test of Table 4.2.

Fixing screws of covers, other than hand-operated fixing screws of glass covers, shall be tightened with a torque equal to two-thirds of that specified in Table 4.1.

Screwed lids shall be tightened with a torque having a value in newton metres numerically equal to one-tenth of the nominal diameter of the screw thread in millimeters. Screws fixing other caps shall be tightened with a torque equal to two-thirds of that specified in Table 4.1.

Acceptance Conditions:

After completion of the tests, the luminaire shall withstand the electric strength test specified in table 10.2, and inspection shall show:

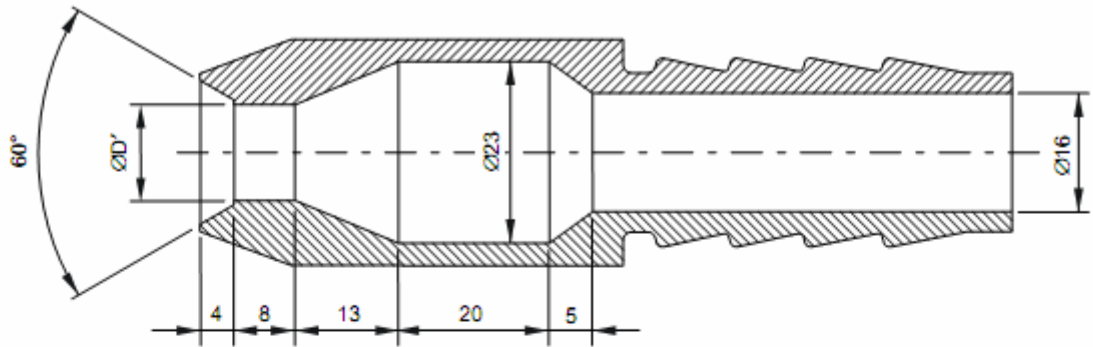
No trace of water on current-carrying parts or SELV parts where the voltage under load exceeds 12 V r.m.s. or 30 V ripple-free d.c. or on insulation where it could become a hazard for the user or surroundings, for example, where it could reduce the creepage distances below the values specified in Section 11.

For luminaires without drain holes, there shall be no water entry.

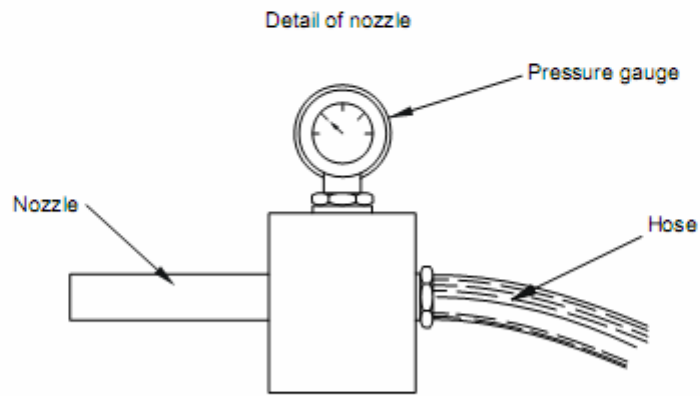
For luminaires with drain holes, water entry including condensation is allowed during the tests if it can drain out effectively and provided it does not reduce the creepage and clearance distances below the minimum levels specified in the standard.

Test Result:

Pass Fail



$D' = 6,3$ mm for the test of 9.2.6 (second characteristic numeral 5)
 $D' = 12,5$ mm for the test of 9.2.7 (second characteristic numeral 6)



IEC 492/08

Dimensions in millimetres

Figure 8 – Nozzle for spray test



Photo Documentation :

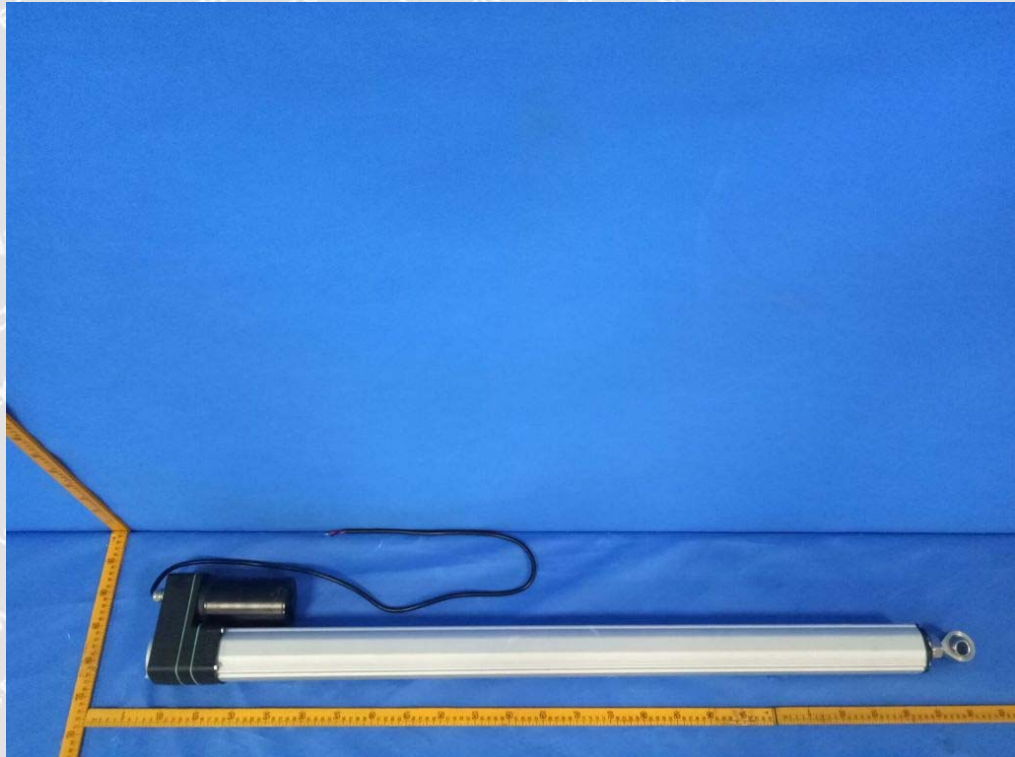


Photo 1 -- Sample



Photo 2 -- Sample



Photo 3 -- Before dust-proof test



Photo 4 -- Dust-proof testing



Photo 5 -- Waterproof testing



Photo 6 -- After test



Photo 7 -- After test

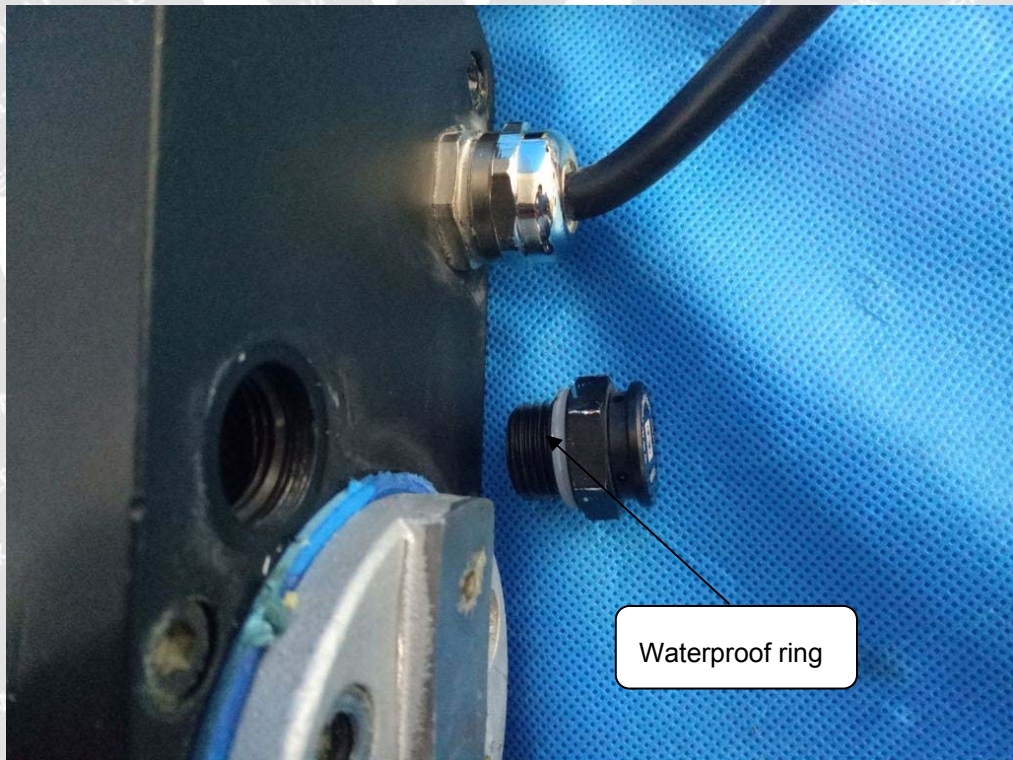


Photo 8 -- After test

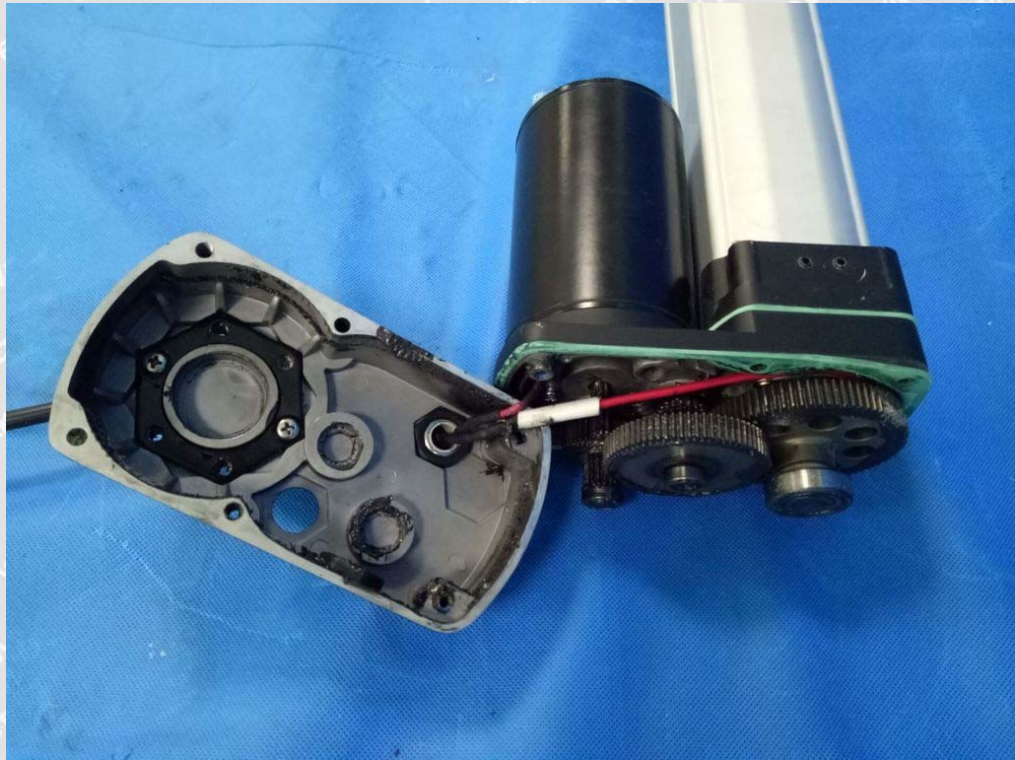


Photo 9 -- After test



Photo 10 -- After test

**Equipment Used during Test :**

Equipment	Model/Type	Cal. Date	Due Date
Hygrothermograph	RS-310	2018-05-02	2019-05-01
Finger	FZ-1107B	2017-11-08	2018-11-07
Push & Pull Scales	NK-300	2017-11-02	2018-11-01
Dustproof chamber	FZ-9617B	2017-11-16	2018-11-15
Tape Measure	Assist 3m	2017-11-07	2018-11-06
Degrees of protection provided by waterproof (IP code)	FZ-9610	2017-11-16	2018-11-15

===== End of Report=====

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