TEST REPORT

EN 60529

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES (IP CODE)

Report reference No. ..... :	3503656.51
Compiled by (+ signature)..... :	Luca Casiraghi
Date of issue ..... :	March 25, 2014
Contents..... :	10 pages

Testing laboratory

Name..... :	DEKRA Testing and Certification S.r.l.
Address……:	Via Martiri della Liberazione, 12 I-23875 Osnago (LC)
Testing location..... :	As above

Client

Name..... :	AIR TORQUE S.p.A.
Address ..... :	Via dei Livelli di Sopra, 11
..... :	24060 Costa di Mezzate (BG), Italy

Test specification

Standard……:	EN 60529:1991+ A1:2000
Test procedure ..... :	N/A
Procedure deviation ……..:	N/A
Date of performance of the tests…...:	2014-03-18 to 2014-03-20

Test item

Description ..... :	PART-TURN ACTUATOR
Trademark..... :	AIR TORQUE S.p.A.
Model and/or type reference……..:	SB AT454 D F10+F12 27DS (S series)
Manufacturer……:	AIR TORQUE S.p.A.

Test case verdicts

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

Test item does meet the requirement……...: P(Pass)

Test item does not meet the requirement……: F(Fail)

Testing

Date of receipt of test item ..... : March 14, 2014

Date(s) of performance of test..... : March 18, 2014 to March 20, 2013

General remarks

This test report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item tested.

Throughout this report a comma is used as the decimal separator.

The tests have been carried out at the above testing location

Atmospheric conditions for water or dust tests

11.1	**General requirements for tests**	
	Ambient Temperature Ta	25 °C
	Ambient Relative humidity Ur	48 %
	Ambient Air pressure P	988 mbar
11.2	**Tests sample**	
	Samples in a clean and new condition, with all parts in place and mounted in the manner stated by the manufacturer.	YES ☒ NO ☐

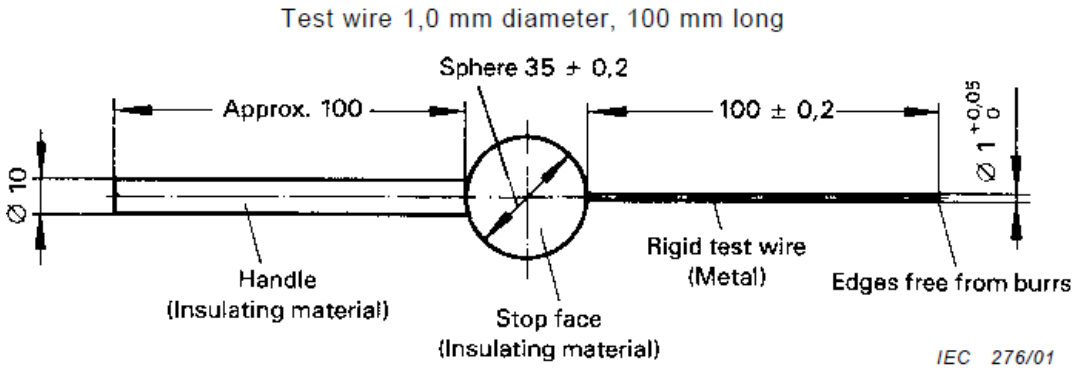
TEST DESCRIPTIONS AND TEST RESULTS

Access to hazardous parts

Description:

The test wire of 1,0 mm 0 shall not penetrate and adequate clearance shall be kept

Test pin equipment:



Test force:

1 N± 10%

Results:

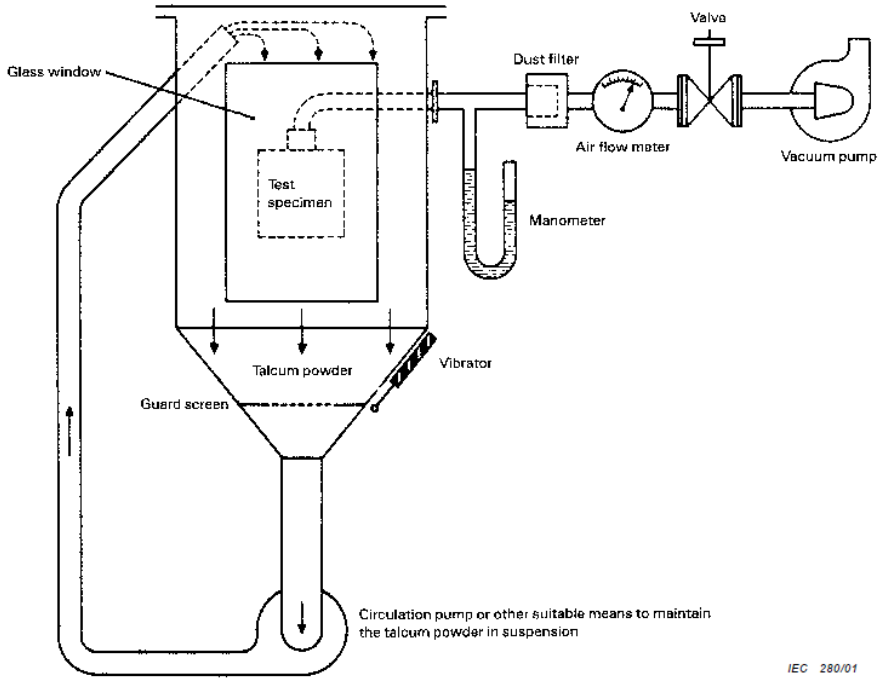
PASS: Test pin did not penetrate into appliance

Dust Test : IP6X

Description:

The test was 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 50 µm and the nominal width of a gap between wires 75 µm. The amount of talcum powder to be used is 2 kg per cubic metre of the test chamber volume.

Test equipment:



NOTE See IEC 60068-2-68, figure 2 valid for La2 only.

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

Results:

PASS: No deposit of dust was observable inside the enclosure at the end of the test.

Water Test: IPX7

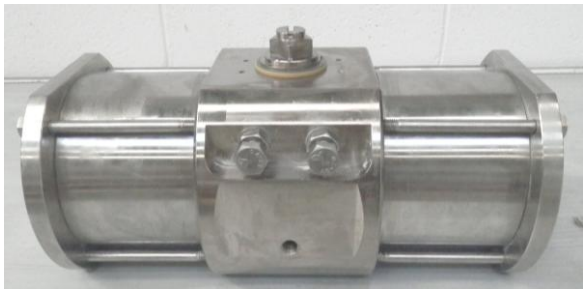
Description:

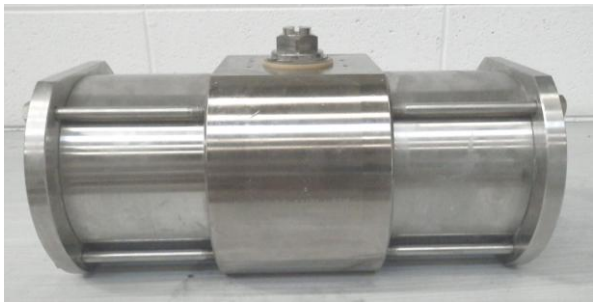
The test was made by completely immersing the enclosure in water in its service position as specified by the manufacturer so that the following conditions were satisfied:
a) The lowest point of enclosures with a height less than 850 mm was located 1 000 mm below the surface of the water;
b) The highest point of enclosures with a height equal to or greater than 850 mm was located 150 mm below the surface of the water;
c) The duration of the test was 30 min;
d) The water temperature does not differ from that of the equipment by more than 5 K.

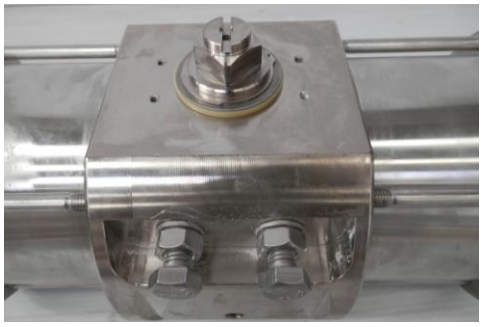
Results:

PASS: No accumulation of water in the equipment.

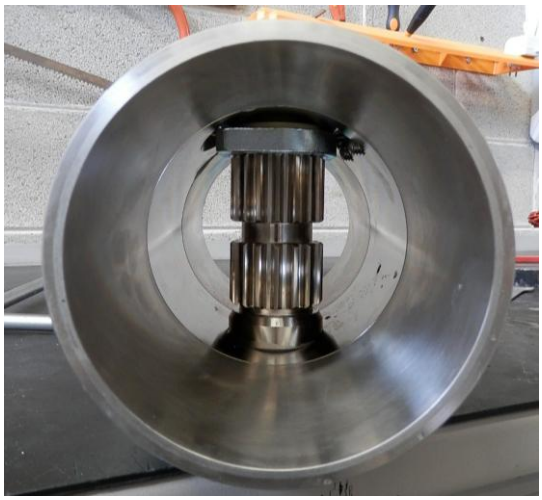
PHOTOGRAPHS







PHOTOGRAPHS DURING AND AFTER TEST IP67



TEST AND MEASURING EQUIPMENT LIST

Dekra Ref.	Type	Manufacturer	Model	Serial Number	Calibration (mm/yy)		Remarks
					Last date	Due date	
AT 0058	Dust Chamber	Galbusera	Art.03.01	AT 0058	01/14	01/15	
AT 0429	Chronometer	Oregon Scientific	SL928M	AT 0429	02/14	02/15	
AT 0050	Box for IPX1 - IPX6	Galbusera	Art. 03.39	AT 0050	01/14	01/15	
ST 0508	Scale graduated 1 m	SEB	---	---	10/13	10/15	
ST 0985	Pressure gauge 10 Bar	Nuova Fima	MT18	A03300	11/12	11/14	
AT 0073	Test Pin	Galbusera	Art. 01.12	AT 0073	01/11	01/16	