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**Ingress Protection test on a
IQT3 Electronic quarter turn valve actuator
on behalf of Rotork Controls**

Report No: N70044797A
Commercially in Confidence

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TEST REPORT

ISSUED BY CSA GROUP TESTING UK LIMITED

Carried out by CSA Group Testing UK Ltd on behalf of:

Rotork Controls Ltd
Brassmill Lane
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Project No: 70044797

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1 INTRODUCTION

This report refers to the performance of the test sample when tested against the agreed programme. It does not imply that any other samples or products necessarily comply with the requirements of the test programme. In addition, whilst this report maybe freely reproduced as a complete document it may not be abstracted.

Manufacturer:	Rotork Controls
Type Identification:	IQT3 Electronic quarter turn valve actuator
Serial numbers	Given identifier 70044797 #1 by CSA Group
Standard:	IEC 60529:2013
Deviations from Standard:	None
Aim:	IP66 IPX8 (7m for 72 hours)
CSA Test Procedure:	LOP 220.08 IP6X LOP 220.16 IPX6 LOP 220.18 IPX8
CSA Internal Test Report:	15/0399
Sample Delivery Date:	26 th August 2015
Tests Conducted Between:	22 nd September to 1 st October 2015

2 DESCRIPTION OF TEST SAMPLE

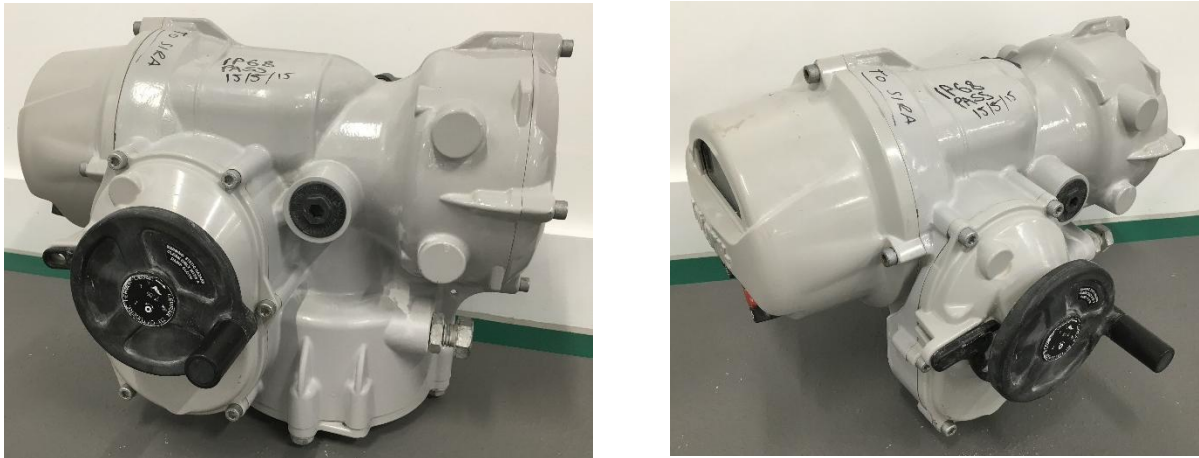


Figure 1 – Views of complete sample

2.1 Materials of construction

The primary materials of construction were metals.

2.2 Dimensions

The approximate dimensions of the sample were, 465 x 360 x 340 mm (h x w x d).

2.3 Fasteners

Prior to testing all cable gland blanks were tool tightened and sealed externally using araldite. All securing screws were tool tightened.

3 TESTS FOR FIRST CHARACTERISTIC NUMERAL: 6

This test was performed on the sample as supplied.

3.1 Test for protection against access to hazardous parts

Reference IEC 60529:2013 clause 12.

A rigid test wire \varnothing 1 mm and length to a stop face of 100 mm was pushed against all openings of the test sample with a force of $1 \text{ N} \pm 10\%$.

3.1.1 Result

The test wire did not come into contact with any hazardous parts.

3.2 Test for protection against solid foreign objects

Reference IEC 60529:2013 clause 13.

The test sample was supported in a typical orientation inside a chamber containing approximately 2 kg of test dust per m^3 , with maximum particle size 75 μm maintained in suspension. As required by the standard a connection was made to a vacuum pump to maintain an under-pressure inside the test sample which did not exceed 20 mbar. The

terminal bung was removed from the sample to allow the under-pressure to be applied to all internal parts of the sample.

The extraction rate measured was such that the test duration was 8 hours, the maximum required by the standard.

3.2.1 Result

On internal inspection of the test sample no dust was found.

4 TEST FOR SECOND CHARACTERISTIC NUMERAL: 6

This test was performed on the sample as supplied.

4.1 Test for protection against water

Reference IEC 60529:2013 clause 14.

The test sample was supported in a typical orientation. Water from a standard water jet hose test nozzle with internal \varnothing 12.5 mm was directed at the test sample from all practicable directions at a rate of 100 L/min from a distance between 2.5 to 3 metres. The test duration was 3 minutes.

4.1.1 Result

On internal inspection of the test sample no water was found.

5 TEST FOR SECOND CHARACTERISTIC NUMERAL: 8

The test was performed twice. Firstly with the sample as supplied and then repeated with the terminal cover removed.

5.1 Test for protection against water

Reference IEC 60529:2013 clause 14.

For each test the sample was completely immersed in water. A pressure was applied to the water surface so that the lowest point of the sample was subjected to a water level equivalent to at least 7 m. The test duration was 72 hours.

5.1.1 Result

On internal inspection of the test sample no water was found in either test.

6 CONCLUSION

The test sample described in sections 1 and 2, when tested in the manner described in sections 3, 4 and 5, satisfied the requirements of IEC 60529:2013, IP Code IP Code 66 and X8 (7 metres for 72 hours).