



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX SIR 04.0024X** issue No.:2  
Status: **Current**  
Date of Issue: **2012-02-22** Page 1 of 5

Certificate history:  
Issue No. 2 (2012-2-22)  
Issue No. 1 (2005-5-9)

Applicant: **Rotork Controls Inc.**  
675 Mile Crossing Blvd  
Rochester  
New York 14624  
**United States of America**

Electrical Apparatus: **EH1.1 Actuator Control Module**  
*Optional accessory:*

Type of Protection: **Flameproof**

Marking: **Ex de\* IIB T4 Gb**  
**Ta = -20°C\*\* to +60°C**  
\* if the increased safety terminal facility is specified  
\*\* may be down to -50°C

*Approved for issue on behalf of the IECEx* **D R Stubbings BA MIET**  
*Certification Body:*

*Position:* **Certification Manager**

*Signature:*  
*(for printed version)*

*Date:*

2012-02-22

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**SIRA Certification Service**  
**Rake Lane**  
**Eccleston**  
**Chester**  
**CH4 9JN**  
**United Kingdom**

**sira**  
CERTIFICATION



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Manufacturer: **Rotork Controls Inc.**  
675 Mile Crossing Blvd  
Rochester  
New York 14624  
**United States of America**

**Manufacturing location(s):**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

- IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition: 6.0
- IEC 60079-1 : 2007-04** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition: 6
- IEC 60079-7 : 2006-07** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition: 4

*This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

IECEx ATR:	File Reference:
UK/SIR/04/R53L11430D	GB/SIR/QAR06.0023/01
UK/SIR/04/R53L11430E	GB/SIR/QAR06.0023/02
GB/SIR/ExTR12.0036/00	GB/SIR/QAR06.0023/03



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The EH1.1 Actuator Control Module is used for the remote positioning of hydraulically actuated process control valves. It is rated up to 690 Vac with a maximum control circuit voltage of 120 Vac or 60 V dc. It consists of a main cylindrical cast aluminium enclosure with a threaded top entry cover, a terminal housing and a hydraulic control block assembly.

The top entry cover is fitted with a window to allow external observation of an internal LCD device. The window is manufactured from glass and is potted into a threaded housing, which in turn is screwed into the top entry cover.

The main enclosure houses PCBs, electrical control circuits and switches. There are two rotary control knob switch shafts and an indicator switch shaft, which pass through the wall of the main enclosure to form cylindrical flameproof joints. Additionally, there is a threaded cable entry in the wall of the main enclosure.

### CONDITIONS OF CERTIFICATION: YES as shown below:

#### EH 1.1 Actuator control Module MAXIMUM FLAMEPATH GAPS (GAS GROUP IIB)

The maximum constructional gap (ic) is less than that required by Table 1 of IEC 60079-1:2003 as detailed below:

Flamepath	Maximum Gap (mm)	Comment
Manifold Block/ Main Enclosure	0.10	Flange joint
Indicator Shaft/ Main Enclosure	0.00/-0.06	Interference fit
Pressure Switch Piston/ Pressure Switch Body	0.13	
Pressure Switch Body/ Manifold Block	0.15	
Terminal Housing/ Main Enclosure	0.15	
Terminal Cover/ Terminal Housing	0.15	



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## EQUIPMENT(continued):

The terminal enclosure provides all electrical field wiring terminations. It connects to the main enclosure by means of a spigoted flamepath joint and is secured by four M8 capscrews. The terminal housing is machined to take four threaded cable entries and is separated from the main enclosure by a terminal bung. The terminal bung comprises of a moulded plastic main body, through which passes a number of terminals that are sealed in place with a potting compound. The terminal enclosure is closed by means of a lid, which connects to the terminal enclosure by means of a spigoted flamepath joint and is secured by four M8 capscrews.

The hydraulic process pressure is sealed from the main enclosure by the hydraulic manifold block, which connects to the main enclosure by means of a flanged flamepath joint and is secured by ten M8 capscrews. The hydraulic valve block utilises up to three solenoid valves which contain welded armatures, a pressure switch and a pressure sensor. The pressure switch is designed to vent the process pressure to atmosphere with a pressure drop across the outlet of less than 2 lbf/in<sup>2</sup>, in the event of the switch diaphragm failing. The pressure sensor consists of a welded metal diaphragm, the stresses in which, at the maximum working pressure, are low enough as not fail in service due to fatigue.



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## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1 – this Issue introduced the following changes:	
1	Extension of the ambient temperature range associated with the EH 1.1 Actuator Control Module, from -40°C to -50°C
2	The option to fit a suitable blanking plug in place of the pressure switch
	The apparatus to be manufactured at an additional location (as listed).
Issue 2 – this Issue introduced the following changes:	
1	Following appropriate re-assessment to demonstrate compliance with the requirements of the IEC 60079 series of standards, the documents previously listed IEC 60079-0:2000 Ed 3.1, IEC 60079-1:1998 Ed 3.2 and IEC 60079-7:2001 Ed 3, were replaced by those currently listed, the markings were updated accordingly and a condition of certification was added to recognise the new standards.
2	The UK manufacturing site for this product has been removed from the certificate.
3	The introduction of an alternative pressure sensor.
4	The introduction of an alternative solenoid coils to replace obsolete items.
5	The introduction of an alternative main PCB.
6	The introduction of an alternative indicator shaft retention method.
7	The introduction of a four way SPDT limit switches assembly.
8	The option to omit the two way SPDT limit switches was approved.
9	The recognition of minor drawing modifications for the purpose of clarification; these amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety