



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: Sira 05ATEX1156

4 Equipment: Type ICO3S Solenoid

5 Applicant: Thompson Valves

6 Address: 17 Balena Close
Creekmoor
Poole
Dorset
BH17 7EF
UK

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number R51L13523A.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2004
EN 60079-1:2004
EN 50281-1-1:1998

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2 G D
Ex d IIC
T6 Ta -*°C to +50°C (up to 10 W Max.)
T4 Ta -*°C to +90°C (up to 10 W Max.)
T6 Ta -*°C to +40°C (up to 14 W Max.)
T4 Ta -*°C to +90°C (up to 14 W Max.)
* -20°C or -60°C dependent on O-ring gasket material

Project Number 51L13523
Date 23 August 2005
C. Index 12

C Ellaby
Certification Officer

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Sira Certification Service

Rake Lane, Eccleston, Chester, CH4 9JN, England
Tel: +44 (0) 1244 670900 Fax: +44 (0) 1244 681330
Email: exhaszard@sira.co.uk

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SCHEDULE

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Sira 05ATEX1156

13 DESCRIPTION OF EQUIPMENT

The Maxseal Type ICO3S Solenoid controls a spindle valve within a valve body that is attached to the bottom of the equipment by two M5 hexagon head bolts; additionally, the valve has two 6mm diameter holes for mounting.

The solenoid comprises a cylindrical cast housing, designated as the solenoid pot, and a top threaded cover, these are both manufactured from 316 stainless steel. The cover on the top of the solenoid pot provides access to the terminal compartment and is fitted with an o-ring interface seal. The solenoid pot housing has a perpendicular raised flat boss moulded onto the side; this boss incorporates an external earth point, a threaded cable entry to the terminal compartment and an M5 tapped hole for a locking set screw which secures the solenoid cover. The solenoid contains an internal coil that is fitted into a coil former housing and potted with an epoxy resin; these are positioned below the terminal compartment and held within the solenoid pot by the solenoid base secured in place by a steel circlip, the base being fitted with two interface o-ring seals.

The equipment operates using the electromagnetic force in the solenoid coil, rated between 24V AC to 240 V AC, 40 to 60Hz or 12V DC to 240 V DC, to actuate the armature that extends through the solenoid pot base; both of these parts are manufactured from magnetic steel. The armature then operates the spindle type valve, thus controlling the flow of gas through the valve. The valve body has various configurations with differing numbers of ports, automatic 3/2, 2/2 and 5/2, manual reset and tamperproof manual reset, manual override and automatic latching options.

Design options:

- The internal circuitry can be either full-wave rectifying, half-wave rectifying or transient suppression.
- Transient suppression circuitry may be fitted with either a single diode, a single zener diode, two zener diodes or a voltage dependant resistor.
- Circuits may be fitted with line monitoring resistors.
- Series supply circuitry may be fitted with a thermal fuse.
- The cable entry may be one of the following types and size, M20 x 1.5 to ISO965 parts 1 & 3, 1/2" NPT to ANSI/ASME B1.20.1 or PG 13.5 to DIN 40430; all entry threads complying with the requirements of IEC 60079-1:2003 Clause 5.3 table 3 or 4 and as applicable clause C.2.2.

14 DESCRIPTIVE DOCUMENTS

14.1	Drawing no:	Sheets	Rev.	Date	Description
	CD-7M-ATEX-IEC-LABEL	1 of 1	3	10 Aug 05 (Sira Stamp)	Product label drawing
	IC03-ATEX-CERT-1	1 of 2	3	10 Aug 05	General arrangement drawing
	IC03-ATEX-CERT-2	2 of 2	4	10 Aug 05	Additional arrangement details/drawing notes
	CD-7M-COVER	1 of 1	3	10 Aug 05	Solenoid cover drawing
	CD-7M-POT	1 of 1	3	10 Aug 05	Solenoid pot drawing
	CD-7M-ARMATURE	1 of 1	3	10 Aug 05	Solenoid armature drawing
	CD-7M-BASE	1 of 1	4	10 Aug 05	Solenoid pot base drawing

14.2 Report number R51L13523A

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15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)

None

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in report number R51L13523A.

17 **CONDITIONS OF CERTIFICATION**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

17.3 When the Maxseal Solenoid Model ICO3S is fitted with Type MFQ Fluorosilicone O-ring seals, it shall be marked with a low ambient temperature of -60°C, alternatively, when it is fitted with Type FPM Fluorocarbon O-ring seals, it shall be marked for a low ambient temperature of -20°C.

Date 23 August 2005

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