sira
Certification Service

1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: Sira 00ATEX1147

4 Equipment: Maxseal Type ICO4S & ICO4D Solenoids

5 Applicant: Thompson Valves

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

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 R51X6091B.

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 50014:1997 (amendments 1 and 2)
EN 50018:1994

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment or protective system 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 2G
EEx d IIC T6 (T_a = -60°C to +48°C) or EEx d IIC T4 (T_a = -60°C to +90°C) for the ICO4S
EEx d IIC T6 (T_a = -60°C to +40°C) or EEx d IIC T4 (T_a = -60°C to +90°C) for the ICO4D

Re-issued 20 April 2001
To permit report number R51X6091A to be replaced by report number R51X6091B and to reflect the changes to the description and the list of certified drawings that this development has generated.

M D Shearman
Certification Manager

Project Number 51V7526
Date 1 December 2000
Re-issued 20 April 2001
C. Index 01

Sira Certification Service
Rake Lane, Eccleston, Chester, CH4 9JN, England
Tel: +44 (0) 1244 670900 Fax: +44 (0) 1244 681330
Email: exhazard@siratc.co.uk
Sira Certification Service is a service of Sira Test & Certification Ltd

SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 00ATEX1147

13 DESCRIPTION OF EQUIPMENT

The Maxseal Type ICO4S and ICO4D Solenoids control a spindle valve attached to the bottom of the equipment and have a maximum internal power dissipation of 18 W. They use a cylindrical cast housing, manufactured from either 316 stainless steel (ICO4S) or cast iron (ICO4D), designated as the solenoid pot and incorporate a range of valve body configurations with differing numbers of ports, automatic latching, manual reset and tamperproof manual reset options.

The Maxseal Solenoids also have various feature differences; some of these have no effect on the explosion protection properties of the equipment and are therefore not mentioned in this certificate. However, the differences that do have an effect on the explosion protection are listed below:

- The cover on the top of the solenoid pot that provides access to the terminal compartment can have either a threaded or spigot joint.
- The Tamperproof Manual Reset option, designated as T.P.M.R, has an additional flamepath.

The threaded cover option, designated ICO4S, uses an M5 locking screw to prevent the cover becoming loose. The spigot cover option, designated ICO4D, uses 3 x M6 hexagon head bolts to retain the cover.

The Maxseal Solenoids have two flat bosses at right angles to each other. These are moulded into the side of the solenoid pot housing. One of these bosses incorporates an external earth point and a threaded entry that leads to the terminal compartment, the other has two tapped holes for mounting. The equipment also contains a solenoid coil that is fitted into a coil former housing and potted with an epoxy resin. These are positioned below the terminal compartment.

The equipment operates by means of the electromagnetic force in the solenoid coil actuating either of two armature options that extend through the solenoid pot base. The armatures then operate the spindle type valve thus controlling the flow of gas through the valve.

Date 1 December 2000
Re-issued 20 April 2001

Sira Certification Service
Rake Lane, Eccleston, Chester, CH4 9JN, England
Tel: +44 (0) 1244 670900 Fax: +44 (0) 1244 681330
Email: exhazard@siratc.co.uk
Sira Certification Service is a service of Sira Test & Certification Ltd

SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 00ATEX1147

14 **DESCRIPTIVE DOCUMENTS**

14.1

Drawing No.	Rev	Sheet	Date	Title
QBB0000000000D0CERT	06	1 of 3	07 Feb 01	ICO4S Flameproof Enclosure Certified Drawing EEx d IIC T6/T4 & ATEX II 2 G
QBB0000000000D0CERT	02	2 of 3	18 Sep 00	ICO4S Flameproof Enclosure Certified Drawing EEx d IIC T6/T4 & ATEX II 2 G
QBB0000000000D0CERT	03	3 of 3	17 Aug 00	ICO4S Flameproof Enclosure Certified Drawing EEx d IIC T6/T4 & ATEX II 2 G
1C0-00B115	01	1 of 1	20 Sep 00	ICO4S Solenoid Pot Casting (Certified Drawing)
1C0-00-113	03	1 of 1	08 Mar 00	ICO4S Solenoid Pot Cover Casting
3M01-00B116	01	1 of 1	01 Aug 00	ICO4S Solenoid Pot (Certified Drawing)
3M84-00B291	01	1 of 1	01 Aug 00	ICO4S Solenoid Pot Cover (Cert. Draw.)
3M11-00B198	04	1 of 1	18 Aug 00	ICO4S Solenoid Pot Base (Cert. Draw.)
3M02-00B292	03	1 of 1	17 Aug 00	ICO4S Armature (Certified Drawing)
3M22-00B004	01	1 of 1	16 Aug 00	ICO4S Follower (Certified Drawing)
SK 3621	01	1 of 1	17 Aug 00	ICO4S Tamperproof Manual Reset Overide $^1/_4$" $^3/_2$
Q1100000H0000D0CERT	02	1 of 3	07 Feb 01	ICO4D Flameproof Enclosure Certified Drawing EEx d IIC T6/T4 & ATEX II 2 G
Q1100000H0000D0CERT	01	2 of 3	20 Aug 00	ICO4D Flameproof Enclosure Certified Drawing EEx d IIC T6/T4 & ATEX II 2 G
Q1100000H0000D0CERT	01	3 of 3	25 Sep 00	ICO4D Flameproof Enclosure Certified Drawing EEx d IIC T6/T4 & ATEX II 2 G
3M84-00B297	01	1 of 1	25 Sep 00	ICO4D Pot Cover (Certified Drawing)
3M01-00B119	01	1 of 1	25 Sep 00	ICO4D Solenoid Pot (Certified Drawing)
3M11-00B200	01	1 of 1	25 Sep 00	ICO4D Pot Base (Certified Drawing)

14.2 Report No. R51X6091

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 No. R51X6091.

17 **CONDITIONS OF CERTIFICATION**

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

Date 1 December 2000
Re-issued 20 April 2001

Sira Certification Service
Rake Lane, Eccleston, Chester, CH4 9JN, England
Tel: +44 (0) 1244 670900 Fax: +44 (0) 1244 681330
Email: exhazard@siratc.co.uk
Sira Certification Service is a service of Sira Test & Certification Ltd

EC TYPE-EXAMINATION CERTIFICATE VARIATION

CERTIFICATE NUMBER	Sira 00ATEX1147	Dated Re-issued	01 December 2000 20 April 2001
VARIATION NUMBER	1 (ONE)	Dated	23 May 2006

VARIATION TO EQUIPMENT

To permit:

1 Modification to resistance/capacitor network
2 The option for the enclosure to be manufactured in aluminium bronze

DESCRIPTIVE DOCUMENTS

Number	Sheet	Rev	Date	Description
Q1100000H0000D0CERT	2 of 3	02	09 Mar 06	ICO4D Cert drawing
QBB0000000000D0CERT	2 of 3	03	09 Mar 06	IC04S Cert drawing

ADDITIONAL CONDITIONS OF CERTIFICATION

None.

File No. 51V14810

Report No. None

D R Stubbings
Certification Manager

Sira Certification Service
Rake Lane, Eccleston, Chester, CH4 9JN, England

Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: info@siracertification.com
Web: www.siracertification.com