



EC Type Examination Certificate CML 13ATEX1023 Issue 0

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC
- 2 Equipment Maxseal ICO4E Valves
- 3 Manufacturer Thompson Valves LTD
- 4 Address 17 Balena Close,
Creekmoor,
Poole,
Dorset,
BH17 7EF,
UK
- 5 The equipment is specified in the schedule of this certificate and the documents to which it refers.
- 6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 9 of Directive 94/9/EC, 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.

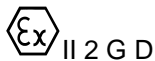
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EC Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 94/9/EC Article 8 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012

EN 60079-1:2007

EN 60079-31:2009

- 10 The equipment shall be marked with the following:



Ex d IIC T6 Gb Ta=-**°C to +43°C (All seals)
Ex d IIC T4 Gb Ta=-**°C to +79°C (NBR seals)
Ex d IIC T4 Gb Ta=-**°C to +90°C (Other seals)
Ex tb IIIC T130°C Db Ta=-**°C to +79°C (NBR seals) or +90°C (Other seals)

Minimum ambient depending on O-ring material, either -30°C, -40°C, -50°C, -55°C or -60°C



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11 Description

The Maxseal ICO4E range of Solenoids control a spindle valve attached to the bottom of the equipment and have a maximum internal power dissipation of 20W. The Maxseal ICO4E Solenoids use a cylindrical cast housing, manufactured from Stainless Steel, designated as the solenoid pot and incorporates a range of valve body configurations, secured with fasteners which are a minimum of Steel Grade 12.9 or Stainless Steel Grade A2-70.

The Maxseal ICO4E have flat bosses cast into the side of the solenoid pot housing, which incorporate five conduit entries, the external earth point and a sintered breathing and draining arrangement.

The equipment also contains a solenoid coil that is fitted into the solenoid pot and potted with an encapsulant. These are positioned below the terminal compartment and the pot base is secured to the solenoid pot with an internal circlip. The equipment operates by means of the electromagnetic force in the solenoid coil actuating the armature that extends linearly through the solenoid pot base. The armature then operates the valve mounted underneath the solenoid.

Various coil suppression devices can be fitted to the terminals in the top of the solenoid pot. The cover of the Maxseal ICO4E has a M85 thread and uses a set screw to prevent the cover becoming loose.

The Maxseal ICO4E has the following ratings:

20W, 12-240V DC / 110V-440V AC

Design option:

- Automatic latching, manual reset and manual override.
- Different O-ring materials may be fitted and are selected according to the minimum ambient temperature range as listed in the conditions of manufacture.
- The internal circuitry can be either full-wave rectifying, half-wave rectifying or transient suppression.
- Transient suppression circuitry may be made up of diodes, zener diodes or a voltage dependant resistor.
- Circuits may be fitted with a line monitoring resistor and EMC capacitors.
- The cable/conduit entries may be one of the following types and size, M20 x 1.5 or M25 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 60079-1:2007, clause 5.3 table 3 or 4 and as applicable clause C.2.2.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	26 Mar 2014	R68A/00	Issue of prime certificate

Note: Drawings that describe the equipment or component are listed in the Annex.



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13 Conditions of manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- 13.1 The ICO4E valves shall be marked with one of the following ambient temperature ranges depending upon the type of O-ring seal used in its construction and temperature class:

O-ring seal material	Min. ambient temperature	Max. ambient temperature	
		T6	T4
MFQ Fluorosilicone O-ring seal	-60°C	+43°C	+90°C
NBR Nitrile O-ring seal	-60°C	+43°C	+79°C
FKM Fluorocarbon O-ring seal	-40°C	+43°C	+90°C
EDPM O-ring seal	-50°C	+43°C	+90°C
FFKM O-ring seal	-30°C	+43°C	+90°C
VMQ Silicone O-ring seal	-55°C	+43°C	+90°C

14 Special Conditions for Safe Use (Conditions of Certification)

None

Certificate Annex



Certificate Number CML 13ATEX1023
Equipment Maxseal ICO4E Valves
Manufacturer Thompson Valves Ltd

The following documents describe the equipment or component defined in this certificate:

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Drawing No	Sheet	Rev	Approved date	Title
CD-SM-ATEX-LABEL	1 of 1	1	26 Mar 2014	ATEX LABEL (CERT.) ICO4E
CD-SM-ATEX-ARMATURE	1 of 1	1	26 Mar 2014	ARMATURE ICO4E (CERTIFIED DRAWING)
CD-SM-ATEX-BASE	1 of 1	1	26 Mar 2014	POT BASE ICO4E (CERTIFIED DRAWING)
CD-SM-ATEX-CERT1	1 of 1	1	26 Mar 2014	ICO4E FLAMEPROOF ENCLOSURE (CERTIFIED DRAWING)
CD-SM-ATEX-CERT2	2 of 2	1	26 Mar 2014	ICO4E FLAMEPROOF ENCLOSURE (CERTIFIED DRAWING)
CD-SM-ATEX-COVER	1 of 1	1	26 Mar 2014	SOLENOID COVER ICO4E (CERTIFIED DRAWING)
CD-SM-ATEX-POT	1 of 1	1	26 Mar 2014	SOLENOID POT ICO4E (CERTIFIED DRAWING)
CD-SM-ATEX-SINTER	1 of 1	1	26 Mar 2014	SINTERED BUSH (CERTIFIED DRAWING)