



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

Certificate No.:	IECEx CML 14.0009	Issue No: 1	Certificate history: Issue No. 1 (2016-04-03) Issue No. 0 (2014-05-07)
Status:	Current	Page 1 of 4	
Date of Issue:	2016-04-03		
Applicant:	Thompson Valves Ltd 17 Balena Close, Creekmoor, Poole, Dorset, BH17 7EF United Kingdom		
Electrical Apparatus:	ICO4E Solenoid Valves		
Optional accessory:			
Type of Protection:	Flameproof and Dust		
Marking:	Ex db IIC T6 Gb or Ex db IIC T4 Gb Ex tb IIIC T130°C Db Up to -60°C to +90°C		

Approved for issue on behalf of the IECEx
Certification Body:

H M Amos

Position:

Technical Manager

Signature:
(for printed version)

Date:

April 4, 2016

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](#).

Certificate issued by:

Certification Management Limited
Unit 1, Newport Business Park
New Port Road
Ellesmere Port
CH65 4LZ
United Kingdom





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Manufacturer: **Thompson Valves Ltd**
17 Balena Close,
Creekmoor,
Poole,
Dorset,
BH17 7EF
United Kingdom

Additional 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 : 2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-31 : 2008 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
Edition:1

*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

Test Report:

[GB/CML/ExTR14.0010/00](#)

[GB/CML/ExTR16.0027/00](#)

Quality Assessment Report:

[GB/SIR/QAR07.0002/06](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The 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 ICO4E Type 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.

See annex for full description and Conditions of Manufacture

CONDITIONS OF CERTIFICATION: NO



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

Issue 1

This Issue introduced the following changes:

- 1 The electroplating thickness has been removed.
- 2 The product branding has been removed from the product name.
- 3 The IEC / EN 60079-1:2007 standard has been updated to the latest revision, EN / IEC 60079-1:2014.

Annex:

[IECEx CML 14.0009 Iss 1 Annex.pdf](#)

Annexe to: IECEx CML 14.0009 Issue 1
Applicant: Thompson Valves Ltd
Apparatus: ICO4E solenoid valves



The ICO4E Solenoids 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 ICO4E Solenoid has a M85 thread and uses a set screw to prevent the cover becoming loose.

The ICO4E Solenoid 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, ½" 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.



Conditions of Manufacture

1. The ICO4E Solenoid valves shall be marked with one of the following ambient temperature ranged 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