IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx CSAE 25.0009X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2025-03-06		
Applicant:	**Igniters Combustion Engineering Limited** Unit 6 Prospect Drive Enterprise Industrial Estate Lichfield, Staffordshire WS14 9UX **United Kingdom**		
Equipment:	**Ignition Coils; Types SA91 and SA101.**		
Optional accessory:			
Type of Protection:	**Increased Safety 'eb', Encapsulation 'mb'**		
Marking:	Ex eb mb IIC T6 Gb For ambient temperatures see Specific Conditions of Use		

Approved for issue on behalf of the IECEx Certification Body:	**Michelle Halliwell**
Position:	**Senior Director of Operations**
Signature: (for printed version)	
Date: (for printed version)	

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 www.iecex.com or use of this QR Code.

Certificate issued by:

CSA Group Testing UK Ltd
Unit 6, Hawarden Industrial Park
Hawarden, Deeside CH5 3US
United Kingdom

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Manufacturer: **Igniters Combustion Engineering Limited**
Unit 6 Prospect Drive
Enterprise Industrial Estate
Lichfield, Staffordshire WS14 9UX
United Kingdom

Manufacturing locations: **Igniters Combustion Engineering Limited**
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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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-18:2017 Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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/CSAE/ExTR25.0013/00

Quality Assessment Report:

GB/CSAE/QAR24.0022/00

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Type SA101 and SA91 Ignition Coils consist of an encapsulated coil assembly fitted within a cylindrical steel body. The steel body has two threaded steel end caps, one of which is centrally threaded to accept a cable gland with a supply cable, the other end cap is either similarly threaded or has a raised threaded centre section. End caps are secured in place with either thread sealant or encapsulant during assembly.

The cable gland may be a Hawke Type 501/453 that is certified by CML, certificate no. IECEx CML18.0131X, to the latest standards and coded Ex db IIC/Ex eb IIC. Alternatively, any Ex db IIC or Ex eb IIC IECEx approved cable gland (to the latest standards) may be used provided it is suitable for the cable i.e. it clamps the cable screen securely.

The supply cable may be either SY (PVC/PVC/GSWB/PVC), SWA or Silicone (Steel over braid), HOFR or RFOU. It has 3 cores with a conductor size between 0.75 mm^2 and 1.5 mm^2. The integral earth conductor is connected directly to an earthing terminal on the inside face of the end cap and the armour or braid is earthed to the cable gland.

It is intended that the primary winding of the coil shall be supplied from a pulsed DC low voltage supply that has a nominal peak voltage of 175 V. The secondary winding, which is connected directly to the primary winding, produces a similar pulsed output at a peak voltage of 8000V for the Type SA91 and Type SA101.

The secondary winding output terminal is made by use of an insulated threaded stud fitted into the end of the coil assembly. This connection either extends out of the whole assembly onto a spark ignition device fitted in the combustion chamber of the associated fuel-burning apparatus (Type SA91) or is fitted into a quick release screwed connector (Type SA101). Either the quick release connector or the screw thread of the end cap is used to safely mount the ignition coil directly onto the fuel-burning apparatus.

The coil must be supplied through a pulsing circuit, which provides the specified input signal. This is limited by an output fuse of up to 500-mA.

For Conditions of Manufacture see annexe

SPECIFIC CONDITIONS OF USE: YES as shown below:
See annexe

Annex:

IECEx CSAE 25.0009X Iss 0 Annexe.pdf

Annexe to: **IECEx CSAE 25.0009X Issue 0**

Applicant: **Igniters Combustion Engineering Limited**

Apparatus: **Ignition Coils; Types SA91 and SA101.**

Specific Conditions of Use

1 The electrical input to the coil shall only be supplied by a pulsing unit, as specified by the manufacturer, that produces a pulsed DC low voltage supply that has a nominal peak voltage of 175V at a limiting current of 250-mA (protected by a 500-mA fuse). The 500-mA fuse shall have at least a 1500A breaking capacity.

2 The pulsing unit shall either be situated in a non-hazardous area or, if it is in a hazardous area, it shall be protected by a suitably approved IECEx enclosure.

3 The supply lead shall either be terminated in a non-hazardous area or, if it is connected in a hazardous area, it shall be suitably terminated and protected in accordance with IEC 60079-0:2017 Ed.7. and IEC 60079-18:2017 Ed.4.1.

4 The quick release connector shall not be connected or disconnected whilst it is energised in a hazardous area.

5 The coil shall not be energised if the quick release connector is separated.

6 The minimum cable bending radii are listed below:

Cable Type	Minimum Bend Radius
SY (PVC/PVC/GSWB/PVC)	20 x Diameter
SWA	6 x Diameter
Silicone (Steel Overbraid)	20 x Diameter
HOFR	8 x diameter
RFOU	8 x diameter

The cable shall not be subjected to bends that are more onerous than those values listed.

7 The ambient temperature ranges applicable to the Ignition Coils are listed below:

Cable Type	Installation Type	
	Flexible (°C)	Fixed (°C)
SY (PVC/PVC/GSWB/PVC)	-5 to +70	-40 to +70
SWA	N/A	-40 to +70
Silicone (Steel Overbraid)	-25 to +70	-60 to +70
HOFR	-20 to +70	-20 to +70
RFOU	-20 to +70	-50 to +70

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The Ignition Coil shall only be used within these temperature ranges.

8 The quick release connector must only be connected to the mating parts fitted to the fuel-burning apparatus.

9 When the Ignition Coil with a Steel Wire is being installed with Armoured supply cable, it shall not be subjected to temperatures below 0°C.

10 The equipment shall be located where it is not subject to water contamination.

Conditions of Manufacture

The Manufacturer shall comply with the following:

1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Certificates.

2 The encapsulated parts of the apparatus shall be subjected to a visual inspection. No visible damage of the compound shall be evident, such as cracks, exposure of the encapsulated parts, flaking, impermissible shrinkage, discoloration, swelling, decomposition or softening, as required by IEC 60079-18:2017, Ed.4.1, clause 9.1.

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3 An electric strength test of 2U + 1000 V (where U is the supply voltage) with a minimum of 1500 Vac, shall be applied between circuit and casing for at least 1 minute as required by clause 9.2 of IEC 60079-18:2017 Ed.4.1. No breakdown shall occur.

4 The electrical data shall be checked by measurement of voltage, current and active power, as required by clause 4.4 of IEC 60079-18:2017 Ed.4.1. Alternatively, the following functional test may be carried out in lieu.

5 This certificate relies on the following previously certified product, to the latest standards. When used as part of an Ignition Coil, the key attributes listed in the table below shall still be maintained by their original certificate.

Description	Certificate No.	Key attributes
Hawke, Type 501/453	IECEx CML18.0131X	Ex db IIC Gb or Ex eb IIC Gb
Any suitable IECEx approved gland	As appropriate	Ex db IIC Gb or Ex eb IIC Gb

6 The manufacturer shall clearly identify the type of supply cable that is used in Ignition Coil so that the user/installer can comply with the specific conditions of use that are applicable to that cable.

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