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 INE 14.0061X	Issue No: 1	Certificate history:
			Issue No. 1 (2016-11-24)
Status:	**Current**	Page 1 of 4	Issue No. 0 (2015-02-24)
Date of Issue:	**2016-11-24**		

Applicant: **Abtech Limited**
199-201 Newhall Rd
Lower Don Valley
Sheffield
South Yorkshire S9 2QJ
United Kingdom

Equipment: **Enclosure for control and power unit type SSD...**

Optional accessory:

Type of Protection: **db, tb, [ia] or [ib]**

Marking:

According to the specific configuration:
Ex d(**) IIB or IIB+H2 T(**) Gb
Ex tb(**) IIIC T(**) Db IP(**)
(**): see annex

Approved for issue on behalf of the IECEx Certification Body: Thierry HOUEIX

Position: Ex Certification Officer

Signature:
(for printed version)

Date: 2016-11-24

ATMOSPHERES EXPLOSIVES Certifié IECEx INERIS IECEx Certified EXPLOSIVE ATMOSPHERES

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:

INERIS
Institut National de l'Environnement Industriel
et des Risques, BP n2
Parc Technologique ALATA
France

INERIS

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Manufacturer: **Abtech Limited**
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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 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*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:

FR/INE/ExTR14.0061/00 FR/INE/ExTR14.0061/01

Quality Assessment Report:

GB/SIR/QAR06.0046/10

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The SSD.. enclosures are made of carbon steel, stainless steel or aluminum for groups IIB, IIB+H2 and IIIC. The lid can be hinged to the enclosure.
The enclosures are intended to contain mainly electrical "NIS" elements and/or with certified "IS" element. The enclosures fitted with internal "NIS" and "IS" elements are provided with an internal thermal probe.
These enclosures can be fitted with some certified components as listed in Annex.
As specified in the instructions, following the type, the size, and the material of the enclosures, the cover should be fixed with screws having the minimum quality A2-80, A4-80, 8.8 or 12.9.
These enclosures get the degree of protection IP6X, IPX6, IP65 or IP66 in accordance with IEC 60529.

CONDITIONS OF CERTIFICATION: YES as shown below:

•The flameproof joints have a different values from those specified in the tables of the EN/IEC 60079-1 standard, for any repair to contact the manufacturer.

When using the components covered by the certificates IECEx INE 13.0072U and IECEx INE 13.0073U :
- The widths of the flameproof joints are superior than those specified in tables of 60079-1 standard.
- During the installation, the user will take into consideration that pilot light type EFL*PC* underwent only a shock corresponding to an energy of a low risk at 2J

•The instructions for safe use are complemented by those stipulated in the instructions manuals of the manufacturer and of each component fitted on the final product.

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

Purpose of the Issue 01:
- Update of the apparatus definition.
- Application of the standards IEC 60079-1: 2014, IEC 60079-31:2013.
- Update the list of accessories which can be fitted on/in the enclosures and some different Ex components listed in Annex
- Update of the maximum dissipated powers inside the enclosures.
- Modification of the electrical parameters.
- Add new sizes of enclosures and window for all sizes.
- Increase the gap up to 0.2 mm of the flanged joint of the enclosures for use in Group IIB.
- Deletion of the list of the certificates for the "IS" elements.
- Modification of the minimum thickness of the enclosures.
- Modification of the type of resin cementing for the windows.
- Added new degree of protection.

Annex:

IECEx INE 14.0061X-01_Annex.pdf

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PARAMETERS RELATING TO THE SAFETY

Electrical parameters :	
Maximum supply voltage of "NIS" elements:	24 kVac - 1500 Vdc.
Maximum supply voltage of "IS" elements	250 V.
Maximum absorbed power:	3500 kVa
Nominal current:	2000 A
Frequency:	50/60/400 Hz.
Cross section of terminals/bus-bars:	1,5÷300 mm2 /20÷600 mm2
Maximum cooling fan flow rate:	25m3/h for volumes of the enclosures greater than 32dm3
Maximum power of the signalling lamp:	1 watt LED 3 watt incandescent (with temperature class T4/T135°C)

The maximum dissipated power is in accordance with the type of enclosure, the temperature class and the ambient temperature as stipulated in the descriptive documents of the manufacturer.

The different parameters of the Ex components installed on the enclosures are defined in the respective certificates.

For enclosures T6/T85°C fitted with " NIS" and "IS" elements the threshold of thermal probe shall be:

Ambient Temperature of "IS" element	Threshold of release of the thermal probe
55°C	53°C ± 3% or 51°C ± 6% or 49°C ± 10%
60°C	58°C ± 3% or 56°C ± 6% or 54°C ± 10%
70°C	67°C ± 3% or 66°C ± 6% or 63°C ± 10%

The enclosures could be used in the range of ambient temperatures from -20°C up to +60°C.

MARKING

Marking has to be readable and indelible; it has to include the following indications:

- ABTECH LIMITED
- Sheffield S9 2QJ - UK
- SSD...(*)
- IECEx INE 14.0061X
- (Serial number)
- Ex db (**) IIB or IIB+H2 T(**) Gb
- Ex tb (**) IIIC T(**) Db
- IP(**)
- ...°C < Tamb < ...°C (**)
- T. Cable : (**)
- Cable entry: see instructions
- WARNINGS:
  DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.
  Additional warning in case of disconnectors are fitted on the enclosures:
  DO NOT OPERATE UNDER LOAD

(*) The dots are replaced by a codification according to the manufacturing variations. The different types are indicated in the descriptive documents.
(**) The type of protection, temperature class, the ambient temperature, degrees of protection and cable temperature will be updated in accordance with different factors as the internal equipment, ambient temperature and maximum power dissipated defined in the descriptive documents.

Marking may be carried out in the language of the country of use.

The equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

In accordance with clause 16.1 of the IEC 60079-1 standard each apparatus defined above has to have successfully passed, before delivery, an overpressure test of a period comprised between 10 and 60 seconds under:

Size of enclosure	Pressure for an ambient temperature down to -20°C:
From SSD001 up to SSD667	12.2 bar
From SSD627 up to SSD778	11.6 bar

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List of components used :

Certificate number	Type of component	Standard
IECEx CES 10.0002U	Three piece connection fittings	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2007 ed 6 (*) IEC 60079-31: 2008 ed 1 (**)
IECEx INE 08.0002U	Conduits flexibles type TFII...	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2007 ed 6 (*) IEC 60079-31: 2008 ed 1 (**)
IECEx INE 12.0043U	Conduits flexibles type TFII...	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2007 ed 6 (*) IEC 60079-31: 2008 ed 1 (**)
IECEx INE 13.0072U	Operators type PM10X, EFP*, EFL*PC* and EFPL3	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2007 ed 6 (*) IEC 60079-31: 2008 ed 1 (**)
IECEx INE 13.0073U	Operators type PM10X, EFP*, EFL*PC* and EFPL3	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2007 ed 6 (*) IEC 60079-31: 2008 ed 1 (**)
IECEx INE 14.0023U	Command and signaling units type DP/DFP and RS/RX	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2007 ed 6 (*) IEC 60079-31: 2008 ed 1 (**)
IECEx INE 14.0005U	Breathing and draining valve type ECD****	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2007 ed 6 (*) IEC 60079-31: 2013 ed 2
IECEx INE 14.0004U	Breathing and draining valve type ECD****	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2007 ed 6 (*) IEC 60079-31: 2013 ed 2
IECEx INE 12.0002U	Breathing or draining device type FT/VS 61090...	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2014 ed 7 IEC 60079-31: 2013 ed 2
IECEx CES 10.0003U	Conductor sealing bushings type NPS, TP, NCS, CP and LPS	IEC 60079-0: 2011 ed 6 IEC 60079-1: 2007 ed 6 (*) IEC 60079-31: 2008 ed 1 (**)

(*) No impact by the Major technical changes between the standard IEC 60079-1 2007 ed 6 and 2007 ed 2014 ed 7.
(**) No impact by the Major technical changes between the standard IEC 60079-7 2006 ed 4 and 2015 ed 5.