



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 SIR 14.0035X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 2	Issue 1 (2018-11-13) Issue 0 (2015-01-07)
Date of Issue:	2022-12-01		
Applicant:	FFE Ltd. 9 Hunting Gate Hitchin Hertfordshire SG4 0TJ United Kingdom		
Equipment:	Vibration Switch Type 3171 (Manual Reset Model)		
Optional accessory:			
Type of Protection:	Flameproof, Increased Safety, and Dust Protection by Enclosure		
Marking:	Ex db eb IIC T6 Gb Ex tb IIIC T85°C Db Ta = -50°C to +80°C		

Approved for issue on behalf of the IECEx
Certification Body:

Michelle Halliwell

Position:

Director Operations, UK & Industrial Europe

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: **FFE Ltd.**
9 Hunting Gate
Hitchin
Hertfordshire SG4 0TJ
United Kingdom

Manufacturing locations: **FFE Ltd.**
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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 60079-1:2014-06](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

[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 Reports:

[GB/SIR/ExTR14.0310/00](#)

[GB/SIR/ExTR18.0208/00](#)

[GB/SIR/ExTR22.0195/00](#)

Quality Assessment Report:

[GB/SIR/QAR13.0025/06](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Type 3171 vibration switches are for use in explosive atmospheres. They are non-isolating, vibration operated pilot switches. The manually reset versions have single pole or double pole changeover micro-switches, either of which can have silver or gold contacts. They are mounted vertically on a rotary or vibrating machine, a steel ball is held against a control magnet into a conical seat within a chamber. The switch set level is adjusted by bringing the control magnet closer to the ball. The vibration switches consist of a zinc die cast alloy (Mazak 3) enclosure, containing a Bartec built in switch type 07-1511-..../....., which carry the certificate numbers, IECEx PTB 07.0040U, Ex d IIC. There is also a Type BK terminal strip which carries the certificate numbers, IECEx SIR 05.0035U, Ex e II. In addition, a steel ball, magnet, actuator and latch are fitted.

The operation of the device occurs when the vibration of the host machine increases to the point where the steel ball falls free from the control magnet conical seat, it falls onto a lever which pushes away from the latching magnet and releases a micro-switch plunger which breaks a circuit and shuts down the host machine. On the manually reset version, a button is pressed to reset the device by returning the steel ball to its conical seat and the latch to its held position.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to the annexe



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

This issue, Issue 2, recognises the following changes; refer to the certificate annex to view a comprehensive history:

1. Following appropriate assessment to demonstrate compliance with the requirements of the latest standards, IEC 60079-0:2011 Ed.6, IEC 60079-1:2014 Ed.7 and IEC 60079-7:2015 Ed.5 are replaced with IEC 60079-0:2017 Ed.7+COR1:2020, IEC 60079-1:2014 Ed.7+COR1:2018 and IEC 60079-7:2017 Ed.5.1
2. Replacement of Weidmüller Type BK6 Terminal Block certificate IECEX SIR 05.0035U with IECEX TUR 18.0019U. As a result the Specific Conditions of Use was amended.
3. Verification of updated derating table. As a result, the Specific Conditions of Use was amended.

Annex:

[IECEX SIR 14.0035X Annexe Issue 2.pdf](#)

Annexe to: IECEx SIR 14.0035X Issue 2

Applicant: FFE Ltd.

Apparatus: Vibration Switch Type 3171 (Manual Reset Model)



Specific Conditions of Use

1. Permitted field wiring conductor cross sections are as follows:

Conductor type	Conductor cross section
Solid	0.75 to 4 mm ²
Stranded	1.5 to 4 mm ²
Flexible	0.75 to 4 mm ²

2. The maximum current rating depends on the higher of the following temperatures:

- the maximum ambient temperature
- the maximum temperature of the host machinery at the mounting location of the vibration switch.

Model number	Switch type	Maximum Ambient/Process Temperature Rating and Corresponding Maximum Current Rating										
		≤50°C	55°C	60°C	65°C	70°C	75°C	76°C	77°C	78°C	79°C	80°C
8100-000	Single pole Silver contact	5 A	5 A	5 A	5 A	4 A	2 A	1.6 A	1.2 A	0.8 A	0.4 A	4 mA
8101-000	Double pole Silver contact	5 A	5 A	5 A	4 A	3 A	1 A	0.8 A	0.6 A	0.4 A	0.2 A	4 mA
8110-000	Single pole Golden contact	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	4 mA
8111-000	Double pole Golden contact	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.2 A	4 mA

Conditions of Manufacture

1. The equipment covered by this certificate incorporates previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices; and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.
2. The manufacturer shall provide details on any earthing or equipotential bonding required for the installation.

Full certificate change history

Issue 1 – this Issue introduced the following changes:

1. Change of company name from Fire Fighting Enterprises Ltd to FFE Ltd & updated drawings.
2. The introduction of a new internal micro-switch carrying the certificate number EPS 14.0091U to replace the currently approved model carrying the certificate number PTB 07.0040U was recognised.
3. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-1:2007 Ed.6 and IEC 60079-7:2006 Ed.4 were replaced by IEC 60079-1:2014 Ed.7 and IEC 60079-7:2015 Ed.5 respectively. The markings were updated accordingly to recognise the new standards.

Annexe to: IECEx SIR 14.0035X Issue 2

Applicant: FFE Ltd.

Apparatus: Vibration Switch Type 3171 (Manual Reset Model)



Issue 2 – this Issue introduced the following changes:

1. Following appropriate assessment to demonstrate compliance with the requirements of the latest standards, IEC 60079-0:2011 Ed.6, IEC 60079-1:2014 Ed.7 and IEC 60079-7:2015 Ed.5 are replaced with IEC 60079-0:2017 Ed.7+COR1:2020, IEC 60079-1:2014 Ed.7+COR1:2018 and IEC 60079-7:2017 Ed.5.1
2. Replacement of Weidmüller Type BK6 Terminal Block certificate IECEx SIR 05.0035U with IECEx TUR 18.0019U. As a result the Specific Conditions of Use was amended.
3. Verification of updated derating table. As a result, the Specific Conditions of Use was amended.