



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 14ATEX1070X** Issue: **3**

4 Equipment: **Vibration Switch Type 3171 (Manual Reset Model)**

5 Applicant: **FFE Ltd.**

6 Address: **9 Hunting Gate  
Hitchin  
Hertfordshire SG4 0TJ  
UK**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 14.2.


9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018+AC:2020 EN 60079-1:2014+AC:2018 EN IEC 60079-7:2015+A1:2018  
EN 60079-31:2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

 II 2G  
II 2D  
Ex db eb IIC T6 Gb  
Ex tb IIIC T85°C Db  
Ta = -50°C to +80°C



Signed: Michelle Halliwell

Title: Director of Operations

Project Number 80096886

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## SCHEDULE

### EU-TYPE EXAMINATION CERTIFICATE

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Issue 3

#### 13 DESCRIPTION OF EQUIPMENT

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 number, PTB 98ATEX 1032U, Ex d IIC. There is also a Type BK terminal strip which carries the certificate number, Sira 01ATEX3247U, 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.

**Variation 1** - This variation introduced the following changes:

- i. Change of company name from Fire Fighting Enterprises Ltd to FFE Ltd & updated drawings.
- ii. The introduction of a new internal micro-switch carrying the certificate number EPS 14ATEX1765U to replace the currently approved model carrying the certificate number PTB 98ATEX1032U was recognised.
- iii. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012, EN 60079-1:2007 and EN 60079-7:2007 were replaced by EN 60079-0:2012/A11:2013, EN 60079-1:2014 and EN 60079-7:2015 respectively. The markings were updated accordingly to recognise the new standards.

**Variation 2** - This variation introduced the following changes:

- i. Following appropriate assessment to demonstrate compliance with the requirements of the latest standards, EN 60079-0:2012/A11:2013, EN 60079-1:2014 and EN 60079-7:2015 are replaced with EN IEC 60079-0:2018+AC:2020, EN 60079-1:2014+AC:2018 and EN IEC 60079-7:2015+A1:2018.
- ii. Replacement of Weidmüller Type BK6 Terminal Block certificate Sira 01ATEX3247U with TÜV 18ATEX8209U. As a result, the Specific Conditions of Use was amended.
- iii. Verification of updated derating table. As a result, the Specific Conditions of Use was amended.

#### 14 DESCRIPTIVE DOCUMENTS

##### 14.1 Drawings

Refer to Certificate Annexe.

##### 14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	18 December 2014	R70004726A	The release of the prime certificate.

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Issue	Date	Report number	Comment
1	13 November 2018	R70158054A	This Issue covers the following changes: <ul style="list-style-type: none"> <li>EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. (In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)</li> <li>The introduction of Variation 1.</li> </ul>
2	15 October 2019	1740	Transfer of certificate Sira 14ATEX1070X from Sira Certification Service to CSA Group Netherlands B.V.
3	01 December 2022	R80096885A	The introduction of Variation 2.

#### 15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

##### 15.1 Permitted field wiring conductor cross sections are as follows:

Conductor type	Conductor cross section
Solid	0.75 to 4 mm <sup>2</sup>
Stranded	1.5 to 4 mm <sup>2</sup>
Flexible	0.75 to 4 mm <sup>2</sup>

##### 15.2 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

#### 16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

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#### 17 CONDITIONS OF MANUFACTURE

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.
- 17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.
- 17.3 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 this equipment; and the manufacturer shall inform CSA Group of any modifications of the devices that may impinge upon the explosion safety design of their equipment.
- 17.4 The manufacturer shall provide details on any earthing or equipotential bonding required for the installation.

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# Certificate Annexe



Certificate Number: Sira 14ATEX1070X

Equipment: Vibration Switch Type 3171 (Manual Reset Model)

Applicant: FFE Ltd.

## Issue 0

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
25-0080-01	1 of 1	1	08 Dec 14	GA, Vibration Switch Type 3171Ex
0040-141-01	1 of 1	1	08 Dec 14	Label Ex MR SPCO SILV
0040-142-01	1 of 1	1	08 Dec 14	Label Ex MR SPCO GOLD
0040-143-01	1 of 1	1	08 Dec 14	Label Ex MR DPCO SILV
0040-144-01	1 of 1	1	08 Dec 14	Label Ex MR DPCO GOLD
0054-001-03	1 to 2	3	08 Dec 14	Lid Casting Information
0054-002-03	1 to 3	3	08 Dec 14	Base Casting Information
0050-003-02	1 of 1	2	10 Jun 14	Cap
0034-007-01	1 of 1	1	08 Dec 14	"O" ring
0050-004-03	1 of 1	3	10 Jun 14	Control Magnet Chamber
0050-005-01	1 of 1	1	10 Jun 14	Reset Button
0050-006-03	1 of 1	3	10 Jun 14	Reset Shaft
0050-009-02	1 of 1	2	10 Jun 14	Sleeve
0051-001-01	1 of 1	1	10 Jun 14	Latching Magnet
0052-005-03	1 of 1	3	10 Jun 14	Lever
0052-006-03	1 of 1	3	10 Jun 14	Retaining Plate
0052-007-04	1 of 1	4	10 Jun 14	Reset Plate

## Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
25-0080-03	1 of 1	3	04 Oct 18	General Arrangement Vibration Switch Type 3171 Ex
0040-141-03	1 of 1	3	04 Oct 18	8100-000 - PLBL Ex MR SPCO SLV - 90.7 x 21.7mm
0040-142-03	1 of 1	3	04 Oct 18	8110-000 - PLBL Ex MR SPCO GLD - 90.7 x 21.7mm
0040-143-03	1 of 1	3	04 Oct 18	8101-000 - PLBL Ex MR DPCO SLV - 90.7 x 21.7mm
0040-144-03	1 of 1	3	04 Oct 18	8111-000 - PLBL Ex MR DPCO GLD - 90.7 x 21.7mm

As the revision number is included in the drawing number the above drawings replace the following:

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
25-0080-01	1 of 1	1	08 Dec 14	GA Vibration Switch Type 3171Ex
0040-141-01	1 of 1	1	08 Dec 14	Label Ex MR SPCO SILV
0040-142-01	1 of 1	1	08 Dec 14	Label Ex MR SPCO GOLD
0040-143-01	1 of 1	1	08 Dec 14	Label Ex MR DPCO SILV
0040-144-01	1 of 1	1	08 Dec 14	Label Ex MR DPCO GOLD

Issue 2. No new drawings were introduced

## Issue 3

Drawing	Sheets	Rev.	Date (Stamp)	Title
25-0080-05	1 of 1	5	11 Nov 22	General Arrangement Vibration Switch Type 3171 Ex
0040-141-05	1 of 1	5	11 Nov 22	8100-000 - PLBL Ex MR SPCO SLV - 90.7 x 21.7mm
0040-142-05	1 of 1	5	11 Nov 22	8110-000 - PLBL Ex MR SPCO GLD - 90.7 x 21.7mm
0040-143-05	1 of 1	5	11 Nov 22	8101-000 - PLBL Ex MR DPCO SLV - 90.7 x 21.7mm
0040-144-05	1 of 1	5	11 Nov 22	8111-000 - PLBL Ex MR DPCO GLD - 90.7 x 21.7mm

The above listed drawings replace the following drawings:

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
25-0080-03	1 of 1	3	04 Oct 18	General Arrangement Vibration Switch Type 3171 Ex
0040-141-03	1 of 1	3	04 Oct 18	8100-000 - PLBL Ex MR SPCO SLV - 90.7 x 21.7mm

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# Certificate Annexe



Certificate Number: Sira 14ATEX1070X

Equipment: Vibration Switch Type 3171 (Manual Reset Model)

Applicant: FFE Ltd.

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Drawing	Sheets	Rev.	Date (Sira stamp)	Title
0040-142-03	1 of 1	3	04 Oct 18	8110-000 - PLBL Ex MR SPCO GLD - 90.7 x 21.7mm
0040-143-03	1 of 1	3	04 Oct 18	8101-000 - PLBL Ex MR DPCO SLV - 90.7 x 21.7mm
0040-144-03	1 of 1	3	04 Oct 18	8111-000 - PLBL Ex MR DPCO GLD - 90.7 x 21.7mm

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