



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 14ATEX1070X** Issue: **0**

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

5 Applicant: **Fire Fighting Enterprises 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 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, 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 60079-0:2012 EN 60079-1:2007 EN 60079-7:2007 EN 60079-31:2013

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC 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 d e IIC T6 Gb
Ex tb IIIC T85°C Db
Ta = -50°C to +80°C

Project Number 70004726

C Ellaby
Deputy Certification Manager

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SCHEDULE

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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.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

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

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

- 15.1 The ambient temperature range is -50°C to +80°C.
- 15.2 Leads connected to the terminals shall be insulated for the appropriate voltage and this insulation shall extend to within 1 mm of the metal of the terminal throat.
- 15.3 All terminal screws, used and unused, shall be tightened down to between 0.5 Nm and 0.7 Nm.
- 15.4 Terminals shall be mounted in such a way as to prevent any rotation of the terminal strip during tightening or loosening of the terminal screws.
- 15.5 Minimum creepage and clearance distances shall be observed between the installed terminals and adjacent conductive equipment/enclosure walls and covers shall be 5 mm. when QB cross-connecting combs are used with the angled black insulation inclined upwards or downwards, the maximum voltage rating of the terminal strips is reduced to 175 V maximum. In addition, the current rating is reduced to 25 A in a 40°C ambient to achieve a T6 rating.
- 15.6 Where the prong of an insulating comb is used in a terminal way, a further single conductor of 1.0 mm minimum cross-sectional area may be connected to the same terminal way on top of the prong. The inside edge of the insulation of the combs cross-connecting arm shall be in contact with the terminal moulding.

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- 15.7 The terminals shall never be exposed to temperatures outside of the range -50°C to + 130°C; in addition, they shall only be installed and wired with cable in an ambient temperature of -10°C to +80°C.
- 15.8 The QB cross-connecting combs are limited to the same current rating as the terminal and shall not be used with currents in excess of this value.
- 15.9 The host machinery ambient temperature must not exceed a T6 rating during continuous operational conditions.
- 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.
- 17 **CONDITIONS OF CERTIFICATION**
- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 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 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.
- 17.4 The manufacturer shall provide details on any earthing or equi-potential bonding required for the installation.

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Certificate Annexe

Certificate Number: Sira 14ATEX1070X
Equipment: Vibration Switch Type 3171 (Manual Reset Model)
Applicant: Fire Fighting Enterprises 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

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