



1 **EU TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 03ATEX3312** Issue: **3**

4 Equipment: **FST Self-Regulating Heating Cable**

5 Applicant: **Flexelec S.A.**

6 Address: 10 Rue des Freres Lumiere  
Z.A. du Bois Rond  
69720 St Bonnet de Mure  
France

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 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 60079-0:2009

EN 60079-30-1:2007

IEC 60079-31:2008

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 specific conditions of use specified 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 2GD

Ex e IIC T6 Gb

Ex tb IIIC T85°C Db IP67

Ex e IIC T4 Gb


Ex tb IIIC T135°C Db IP67

Applicable for products rated up to 40 W/m and for nominally rated 230 V products up to 31 W/m powered up to a maximum 277 V.

Applicable for products rated above 40 W/m and for nominally rated 230 V products above 31 W/m powered up to a maximum 277 V.

Refer to the Description of Equipment for the ambient range.

Project Number 70125791

  
A G Boyes  
Certification Support Officer

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**SCHEDULE**

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**13 DESCRIPTION OF EQUIPMENT**

The FST Heating Cables utilise two parallel buswires housed within a semi-conductive self-limiting matrix. The semi-conductive self-limiting matrix is covered with a jacket which is then protected by an aluminium sheath or a metallic braid of either tinned copper or nickel plated copper. An optional outer jacket of TPE, PE, PVDF, MFA or PFA can be specified. The cables are rated at up to 50W/m and 277V.

The cable is intended to be cut to length on site and the equipment is designed to be connected to a supply by means of suitable certified cable entries and junction boxes (i.e. Ex e or Ex d) in accordance with the manufacturer’s installation instructions. Termination can be made using the Heat Trace termination kits approved under Sira 12ATEX3157U, Sira 05ATEX3099U and Sira 04ATEX3293X or any suitably certified type termination kit, which fully isolate, insulate and seal the conductive cores.

Description	Temperature
Max. continuous exposure temperature (Power ON)	85°C
Max. permissible exposure temperature (Power OFF)	85°C
Minimum installation temperature	-40°C

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

- i. This equipment was permitted to be used in the presence of combustible dust; the marking of the equipment and the list of documents that assures Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate were amended accordingly.
- ii. The option to add a customer name or reference in the marking applied to the trace heating cables was recognised.

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

- i. The use of the Heat Trace End Termination Kit (Sira certificate number 05ATEX3099U) with the trace heating cable was allowed.

**Variation 3** - This variation introduced the following change:

- i. The braid diameter on the cables was altered

**Variation 4** - This variation introduced the following changes:

- i. The FST Heating Cables range of electrical heat tracing cables energised temperature rating was permitted to be the same as the non-energised temperature rating (100°C). (Note: The temperature rating is the withstand temperature of the cable insulation and is not related to the temperature class.).

**Variation 5** - This variation introduced the following changes:

- i. The introduction of a new type reference, whereby the type FSR heating cable is known as the type FLVw (See Variation 8) heating cable that has a reduced voltage rating of 24 V (nominal).

**Variation 6** - This variation introduced the following changes:

- i. To allow optional Nickel or Tin coated copper bus wire conductors.
- ii. Bus wire specifications to have a Min/Max cross sectional area.

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**Variation 7** - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, IEC 62086-1:2001, EN 50014:1997 (amendments 1 and 2), EN 50019:2000 and EN 50281-1-1:1998, were replaced by those currently listed, the markings in section 12 were updated accordingly and the conditions were modified to recognise the requirements of the latest standards.

**Variation 8** - This variation introduced the following changes:

- i. The markings and description of the ratings in the markings have been amended to include the latest requirements for type of protection Ex tb.
- ii. The descriptions have been amended to align with other certificate descriptions and to remove ambiguity and inconsistencies across the range of the manufacturer's certificates.
- iii. The upper tolerance of the power output stated in the description was amended.
- iv. At the request of the manufacturer, the drawing numbers of existing drawings were clarified to be in line with their company system.

**Variation 9** - This variation introduced the following changes:

- i. Correction of a typographical error in Condition 17.3.
- ii. Removal of the nominal output temperature (10°C) from the marking on the drawing CD 16.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report number	Comment
0	29 October 2003	R51V10416A	The release of prime certificate.
1	9 February 2006	R51V12673A	Issued to introduce the changes described in report number R51V12673A
2	25 January 2013	R29885A/00	This Issue covers the following changes: <ul style="list-style-type: none"> <li>• All previously issued certification was rationalised into a single certificate, Issue 2, Issues 0 to 1 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.</li> <li>• The introduction of variations 1 to 8 inclusive.</li> </ul>



## SCHEDULE

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**Issue 3**

Issue	Date	Report number	Comment
3	07 June 2017	R70125791A	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. <i>(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.)</i></li><li>• The introduction of variation 9.</li></ul>

14.3 Certificate number Sira 02ATEX3070 Issue 11.

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

None

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 MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EU type-examination certificates are required to comply with the production control requirements defined in Article 13 of directive 2014/34/EU.

17.3 An electric strength test of 2 U +1000 V rms shall be applied between the conductors and the outer braid or jacket as appropriate for 60 seconds as required by clause 5.1.2 of EN 60079-30-1:2007.

17.4 An electric strength test of the polymeric sheath (overjacket) used for corrosion resistance shall be carried out in accordance with the requirements of EN 60079-30-1:2007 clause 5.2.1.

17.4 The manufacturer shall verify the output rating for each cable manufactured in accordance with EN 60079-30-1-2007 clause 5.2.2.

17.5 The manufacturer shall demonstrate, through their quality program, the thermal safety of the trace heating cable with respect to time as per EN 60079-30-1:2007 clause 5.1.12.

# Certificate Annexe



**Certificate Number:** Sira 03ATEX3312  
**Equipment:** FST Self-Regulating Heating Cable  
**Applicant:** Flexelec S.A.

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## Issue 0

Drawing	Sheets	Rev	Date (Sira stamp)	Title
CD 16	1 of 1	0	28 Oct 03	List and Marking of Self Limiting Cables ATEX

## Issue 1

Drawing	Sheets	Rev	Date (Sira stamp)	Title
CD 16	1 of 1	2	21 Sep 04	List and Marking of Self Limiting Cables ATEX

## Issue 2

Drawing	Sheets	Rev	Date (Sira stamp)	Title
CD 16	1 of 1	3	25 Jan 13	List and Marking of Self Limiting Cables ATEX

## Issue 3

Drawing	Sheets	Rev	Date (Sira stamp)	Title
CD 16	1 of 1	4	20 Apr 17	List and Marking of Self Limiting Cables ATEX

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