



1 **EU TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 03ATEX3314** Issue: **3**

4 Equipment: **FSX/TF 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 T3 Gb

Ex tb IIIC T200°C Db IP67

Ex e IIC T2 Gb

Applicable for products rated up to 75 W/m and 277 V max.

Applicable for products rated above 75 W/m and for nominally rated 230 V products powered up to a maximum 277 V.

Ex tb IIIC T300°C Db IP67

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 FSX/TF Self –Regulating Heating Cable comprises two parallel buswires housed within a semi-conductive self-limiting matrix. The semi conductive self-limiting matrix is covered with a fluoropolymer 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 MFA, PFA or Silicone can be specified. The cables are rated at up to 100 W/m and 277 V.

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)	225°C
Max. permissible exposure temperature (Power OFF)	225°C
Minimum installation temperature	-40°C

Variation 1 - This variation introduced the following change:

- i. A change in braid diameter on the cables.

Variation 2 - This variation introduced the following change:

- i. The specification of the cable to be changed, as listed in the table below;

Description	FSX/TF Self –Regulating Heating Cable	
	Previous values	Latest values
Max. continuous exposure temperature (Power ON)	120°C	150°C
Max. permissible exposure temperature (Power OFF)	200°C	240°C
T - Rating	T3	T3

Variation 3 - This variation introduced the following change:

- i. Bus wire specifications amended to have a Min/Max cross sectional area.

Variation 4 - This variation introduced the following change:

- 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 5 - 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.

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Variation 6 - 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"> • 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. • The introduction of variations 1 to 5 inclusive.
3	07 June 2017	R70125791A	This Issue covers the following changes: <ul style="list-style-type: none"> • 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> • The introduction of variation 6.

14.3 Certificate number Sira 02ATEX3072 Issue 10

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.

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Sira Certification Service

Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900
 Fax: +44 (0) 1244 681330
 Email: ukinfo@csagroup.org
 Web: www.csagroupuk.org



SCHEDULE

EU TYPE-EXAMINATION CERTIFICATE

Sira 03ATEX3314
Issue 3

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 03ATEX3314

Equipment: FSX/TF Self-Regulating Heating Cable

Applicant: Flexelec S.A.

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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1 **EU TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 03ATEX3315X** Issue: **3**

4 Equipment: **FSX/T 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 IP6X

Ex e IIC T2 Gb

Ex t IIIC T300 °C Db (applicable to cables that are used at up to 277 Vmax)

Project Number 70125791


A G Boyes
Certification Support Officer

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SCHEDULE

EU TYPE-EXAMINATION CERTIFICATE

**Sira 03ATEX3315X
Issue 3**

13 DESCRIPTION OF EQUIPMENT

The FSX/T Self –Regulating Heating Tape comprises two 1.25 mm² copper buswires which are housed within a semi-conductive self-limiting matrix. This is covered with a fluoropolymer jacket. A metallic braid of either tinned copper or nickel copper protects the fluoropolymer jacket.

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 any suitably certified type termination kit, which fully isolate, insulate and seal the conductive cores.

Variation 1 - This variation introduced the following changes:

- i. To permit this equipment to be used in the presence of combustible dust; the marking in section 12 is amended accordingly and the relevant standard added at section 9.
- ii. The option to add a customer name or reference in the marking applied to the trace heating cables

Variation 2 - This variation introduced the following change:

- i. A change in braid diameter on the cables.

Variation 3 - This variation introduced the following change:

- i. Bus wire specifications amended to have a Min/Max cross sectional area.

Variation 4 - 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 5 - 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	09 February 2006	R51V12673A	Issued to introduce the changes described in report number R51V12673A

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SCHEDULE

EU TYPE-EXAMINATION CERTIFICATE

Sira 03ATEX3315X
Issue 3

Issue	Date	Report number	Comment
2	25 January 2013	R29885A/00	This Issue covers the following changes: <ul style="list-style-type: none">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.The introduction of variations 1 to 4 inclusive.
3	07 June 2017	R70125791A	This Issue covers the following changes: <ul style="list-style-type: none">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>The introduction of variation 5.

14.3 Certificate number Sira 02ATEX3073 Issue 6.

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

15.1 This equipment shall only be used in situations where there is a low risk of impact.

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 IEC 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 IEC 60079-30-1:2007 clause 5.2.1.

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

17.6 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.

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Sira Certification Service

Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: ukinfo@csagroup.org
Web: www.csagroupuk.org

Certificate Annexe



Certificate Number: Sira 03ATEX3315X
Equipment: FSX/T Self-Regulating Heating Cable
Applicant: Flexelec S.A.

Issue 0

Drawing	Sheets	Rev	Date (Sira stamp)	Title
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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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