



1 **TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 17ATEX4222X** Issue: **0**

4 Equipment: **Temperature / mAConverter, Types: TPIvL-SI and μCvL-SI ; TPIv-SI and μCv-SI ; DSvL-SI and DASvL-SI ; DSv-SI and DASv-SI**

5 Applicant: **ARDETEM SFERE**

6 Address: Parc Activité Arbora N°2
Route de Brindas
69510 Soucieu en Jarrest
France

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

8 Sira Certification Service certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of Category 3 equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to European Union Directive 2014/34/EU of the European Parliament and of the Council, 26 February 2014.

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 of this certificate, has been assessed by reference to:

EN 60079-0:2012/A11:2013 EN 60079-7:2015 EN 60079-11:2012 EN 60079-15:2010

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 Type Examination Certificate relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

12 The marking of the equipment shall include the following:



II 3(1)G
Ex ec nC [ia Ga] IIC T4 Gc
Ta = -20°C to +60°C

Project Number 70105562

C Ellaby
Deputy Certification Manager

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SCHEDULE

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Sira 17ATEX4222X
Issue 0

13 DESCRIPTION OF EQUIPMENT

Programmable Measurement Converter Boards Models TPIvL-SI and μ CvL-SI ; TPIv-SI and μ Cv-SI ; DSvL-SI and DASvL-SI ; DSv-SI and DASv-SI are used to convert the measurement signal of intrinsically safe field equipment as a voltage or current source, into one current or voltage signal and/or contact outputs.

It relies on opto-isolators to provide an isolated, intrinsically safe output. The equipment is housed in a DIN-rail mounted polyamide enclosure that is intended to be installed in a location that provides suitable protection against moisture and dust

The converter boards are located in a Zone 2 hazardous area.

The following entity parameters apply to the intrinsically safe outputs:

- | | |
|--------------------------|------------------------------|
| - H1/G1 (sensor supply): | H2, H 3, H4, G1, G2, G3, G4: |
| Uo = 28.4V, | Uo = 8.0V, |
| Io = 90.5mA, | Io = 2.0mA |
| Po = 643mW, | Po = 2.0mW |
| Co = 77nF, | Co = 8.4 μ F |
| Lo = 4.0mH, | Lo > 1000mH |

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	Inserted on Issue	R70105562A	The release of the prime certificate.

15 SPECIFIC CONDITIONS OF USE

- 15.1 Warning – in locations where high external humidity and internal temperature variations (e.g. frequent on-off cycles) may cause condensation inside the equipment, the interior shall be periodically inspected.
- 15.2 When installed in the hazardous area, the equipment shall be installed in a suitably-certified enclosure (Ex ec for Gas applications Zone 2). When installed in a non-hazardous area, the equipment may alternatively be installed in a controlled environment that provides equivalent protection. The installer shall ensure that the maximum ambient temperature of the equipment when installed is not exceeded. Cable entry and blanking elements shall fulfil the same requirements.
- 15.3 When the device is mounted in a hazardous area, connection and disconnection of the module from the rail (TPIv-SIN) or any of its connectors (TPIv-SI / TPIv-SIN) while live is only permitted if the potentially explosive atmosphere is shown to be absent.
- 15.4 The field installation shall be undertaken in a controlled environment with suitably reduced pollution, limited to pollution degree 2 or better as stated in manufacturer's documentation.
- 15.5 The non-intrinsically safe circuits may only be connected to an overvoltage category I or II power source, as defined in IEC 60664-1.

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Issue 0

15.6 The supply shall be protected such that transients are limited to a maximum of 140% of the rated voltage; no such protection is required for the signal lines.

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 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 Type Examination Certificates are required to comply with the production control requirements defined in Article 13 of Directive 2014/34/EU.

17.3 In accordance with EN 60079-7:2015 clause 7, each manufactured sample of the equipment shall be subjected to an electric strength test for at least 1 minute using a test voltage of:

- at least 1500 V r.m.s. +50 %, shall be applied for modules rated over 24VDC, between all joined module supply leads and the ground terminal, for at least 60 seconds as required by EN 60079-7:2006: Clause 6.1.
- at least 500V r.m.s. +50 %, shall be applied for modules rated below 24VDC, between all joined module supply leads and the ground terminal, for at least 60 seconds as required by EN 60079 7:2006: Clause 6.1.

Alternatively, a test voltage of 1.2 times the voltage shall be applied for at least 100 ms, as required by EN 60079-7:2015:Clause 7.2.

Where there is a routine dielectric strength test in the relevant industrial standard for the individual items of electrical equipment, this test is acceptable.

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Certificate Annexe

Certificate Number: Sira 17ATEX4222X

Equipment: Temperature / mAConverter, Types: TPIvL-SI and μ CvL-SI ; TPIv-SI and μ Cv-SI ; DSvL-SI and DASvL-SI ; DSv-SI and DASv-SI

Applicant: ARDETEM SFERE

Issue 0

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
20170613FK	1 to 16	C	21 Sep 17	Descriptive Notice
Dossier Normes	1 of 19	F	21 Sep 17	Schematic, layout and Bill of Material
20170621FK	1 to 7	A	21 Sep 17	Marking, IECEx/ATEX
CO/137TPIv SI	1 to 7	A	21 Sep 17	Installation Manual
CO/137TPIv SIN	1 to 8	A	21 Sep 17	Installation Manual

Draft

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