



1 **TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 14ATEX4049X** Issue: **0**

4 Equipment: **FIO 2.0 Regulator**

5 Applicant: **Pietro Fiorentini S.p.A.**

6 Address: Via Pasteur, 1/3  
28060 San Pietro  
Mosezzo  
Novara  
Italy

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 94/9/EC of 23 March 1994.

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

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 special conditions for safe 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 3G

Ex nA[ic] IIC T3 Gc

Tamb = -20°C to +60°C

Project Number 70019406

C Ellaby  
Deputy Certification Manager

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**SCHEDULE**

**TYPE EXAMINATION CERTIFICATE**

Sira 14ATEX4049X  
Issue 0

**13 DESCRIPTION OF EQUIPMENT**

The FIO 2.0 Regulator performs measurements of gas parameters and controls actuation valves for regulation of gas pressure and flow rate. It comprises a plastic enclosure with a hinged cover containing a window for viewing the internal display. Internally, there is a main board, to which are attached various daughter boards.

The equipment comprises the following functional modules:

- Analogue measurements up to four pressure sensors, one temperature sensor and up to two displacement sensors
- Acquisitions up to six digital status inputs
- Acquisitions of BF pulses and Namur HF pulses
- One pulse repetition output
- ON/OFF controls for up to four activation valves
- GSM/GPRS remote communication
- Bluetooth interface
- Two RS485 serial interfaces
- LCD and keyboard user interface

The FIO 2.0 can be powered from either of two sources:

- Internal non-rechargeable lithium-thionyl chloride battery pack
- External power supply (6-16 V, current-limited to 200 mA) plus a rechargeable internal lithium-ion battery pack.

Additionally, the equipment has the following non-intrinsically safe connection to non-hazardous area equipment:

- Digital i/o (connecting to the 'DOUNT' terminals): 15 Vdc

M9 is an intrinsically safe output with the following entity parameters:

	HFI	BFI
Uo	8.61 V	7.14 V
Io	16 mA	1.4 mA
Po	34 mW	2.5 mW
Co	47 µF	136 µF
Lo	312 mH	1000 mH
Ui	0	0

**14 DESCRIPTIVE DOCUMENTS**

**14.1 Drawings**

Refer to Certificate Annexe.

**14.2 Associated Sira Reports and Certificate History**

Issue	Date	Report no,	Comment
0	18 March 2015	R70019406A	The release of the prime certificate.

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**Sira Certification Service**

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**SCHEDULE**

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Issue 0

**15 SPECIAL CONDITIONS FOR SAFE USE**

- 15.1. The FIO 2.0 shall be mounted in an additional external enclosure that provides protection against impact and exposure to ultra-violet light.
- 15.2. The EXT PWR SUPPLY shall be current limited to 200 mA.
- 15.3. The battery pack shall only be replaced in a non-hazardous area or when an explosive atmosphere is not present. Either the non-rechargeable (lithium thionyl chloride) or the rechargeable (lithium-ion) battery pack can be fitted but not both. Only battery packs supplied by Pietro Fiorentini shall be used.

**16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (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 CERTIFICATION**

- 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 8 of directive 94/9/EC.

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# Certificate Annexe

Certificate Number: Sira 14ATEX4049X  
Equipment: FIO 2.0 Regulator  
Applicant: Pietro Fiorentini S.p.A.



## Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
AP0670T01M01R00-DSMR04I	1 to 3	04	14 Jan 15	General assembly
ET0670T01M01R00-DSMR04E	1 of 1	-	13 Jan 15	Marking, zone 2
SK0670T01M01R00-BOMR14E	1 to 2	1.4	27 Jan 15	BoM, main board
SK0670T01M01R00-SCER07E	1 to 22	0.7	13 Jan 15	Schematic, main board
SK0670T02M01R00-BOMR01E	1 of 1	0.1	14 Jan 15	BoM, LCD/keyboard interface
SK0670T02M01R00-SCER01E	1 of 1	0.1	27 Jan 15	Schematic, LCD/keyboard interface
SK0670T03M01R01-BOMR00E	1 of 1	0.0	27 Jan 15	BoM, modem interface
SK0670T03M01R01-SCER00E	1 of 1	0.0	27 Jan 15	Schematic, modem interface
SK0670T04M01R00-BOMR02E	1 of 1	0.2	14 Jan 15	BoM, bluetooth interface
SK0670T04M01R00-SCER01E	1 of 1	0.1	27 Jan 15	Schematic, bluetooth interface
SK0670T06M01R00-BOMR02E	1 of 1	0.2	14 Jan 15	BoM, cell protection board
SK0670T06M01R00-SCER01E	1 of 1	0.1	27 Jan 15	Schematic, cell protection board
SK0670T07M01R00-BOMR01E	1 of 1	0.1	27 Jan 15	BoM, modem u-blox interface
SK0670T07M01R00-SCER01E	1 of 1	0.1	13 Jan 15	Schematic, modem u-blox interface

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