



1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 18ATEX2150X** Issue: **1**

4 Equipment: **Model SidePak AM520i Personal Aerosol Monitor**

5 Applicant: **TSI Inc.**

6 Address: 500 Cardigan Road
Shoreview, MN 55126
USA

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: 2012/A11:2013 EN 60079-11:2012

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 identified 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:

 I M1
II 1G
Ex ia I Ma
Ex ia IIC T4 Ga
0°C to +50°C

Project Number 70203637


C Ellaby
Deputy Certification Manager

This certificate and its schedules may only be reproduced in its entirety and without change.



SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

Sira 18ATEX2150X
Issue 1

13 DESCRIPTION OF EQUIPMENT

The SidePak AM520i Personal Aerosol Monitor is a portable, battery-powered device designed to continuously measure the particle mass concentration of the ambient atmosphere. The Sidepak AM520i contains an IEC Class 1 approved laser assembly. External air is drawn through an inlet into an internal optical chamber where the scattered laser light is measured to determine particle mass concentration. The Sidepak AM520i is contained within a polymeric enclosure having an inlet and an outlet port for the ambient flow path and an external USB connection. The removable battery pack contains a barrel-type DC connector used for charging the pack outside of the hazardous area. The user interacts with the instrument through a membrane switch on the front of the enclosure. The equipment has approximate overall dimensions of 87.63 mm (W) x 129.03 mm (H) x 75.44 mm (D).

Data downloading while the unit is in the non-hazardous area may performed via the Micro USB 2.0 Type B port connected to a computer. The output parameters at this USB port are: $U_o = +6.51V$, $I_m = 62 \text{ mA}$; limited by the certified on-board 62 mA Littlefuse fuse part number 259.062 (Baseefa02ATEX0071U) and two parallel 6.51V SMBJ5341B Zener diode devices in addition to the Micro USB 2.0 Type B standard international protocol powered by the certified SELV power source.

Variation 1 - This variation introduced the following changes:

- i. Addition of Group I marking i.e. I M1 Ex ia I Ma to the product.
- ii. Modification of label drawing to accommodate new markings.
- iii. Creation of a new scheduled drawing for the membrane switch.
- iv. Creation of a new scheduled drawing with the content of the instructions manual to be controlled.
- v. Deletion of 2 drawings from the list of manufacturer's documents.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	05 October 2018	R70177294A	The release of the prime certificate.
1	08 February 2019	R70203637A	The introduction of Variation 1.

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

- 15.1 The AM520i Personal Aerosol Monitor shall only be used in conjunction with battery pack assembly model number 803322.
- 15.2 For applications in the hazardous area, connection to the Micro USB 2.0 Type B port terminal shall not be made. When used outside of the hazardous area, the USB terminal may be connected to non-intrinsically safe mating Micro USB 2.0 Type B port of a computer that shall be:
 - a. Powered only by a certified safety extra low-voltage (SELV) supply (per IEC 60950) having a U_m output voltage limit of [25 Vdc at 90 Watts].

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SCHEDULE

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- 15.3 The AM520i shall only be charged in the non-hazardous area using the charger specifically supplied for use with the unit approved as SELV or Class 2 equipment against IEC 60950. The maximum output voltage from the charger shall not exceed 12 Vdc.
- 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 conformity to type requirements defined in Article 13 of Directive 2014/34/EU.
- 17.3 Connector J201 on the Main board shall not be used as a condition of this certification.