



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx SIM 19.0009X

Issue No: 0

Certificate history:

[Issue No. 0 \(2019-07-22\)](#)

Status: **Current**

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Date of Issue: **2019-07-22**

Applicant: **TSI Incorporated**  
500 Cardigan Road  
Shoreview Minnesota 55126  
**United States of America**

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

*Optional accessory:*

Type of Protection: **Intrinsic Safety "i"**

Marking:

Ex ia I Ma  
Ex ia IIC T4 Ga  
0 °C ≤ Ta ≤ +50 °C

*Approved for issue on behalf of the IECEx  
Certification Body:*

Geoffrey Barnier

*Position:*

Principal Engineer - Certification

*Signature:  
(for printed version)*

*Date:*

23 July 2019

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](#).

Certificate issued by:

**Safety in Mines Testing and Research Station (Simtars)**  
**2 Robert Smith Street, REDBANK QLD 4301**  
**Australia**

# Simtars



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Manufacturer: **TSI Incorporated**  
500 Cardigan Road  
Shoreview Minnesota 55126  
**United States of America**

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

## STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0

**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

## TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

[GB/SIR/ExTR18.0175/00](#)

[GB/SIR/ExTR19.0027/00](#)

Quality Assessment Report:

[CA/CSA/QAR16.0008/01](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

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 I 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).

### SPECIFIC CONDITIONS OF USE: YES as shown below:

The AM520i Personal Aerosol Monitor shall only be used in conjunction with battery pack assembly model number 803322.

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 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].

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.

Connector J201 on the Main board shall not be used as a condition of this certification.

### Annex:

[IECEx SIM 19.0009X-0 AM520i Annex.pdf](#)



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Certificate No.: **IECEx SIM 19.0009X**  
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**Manufacturer's documents:**

**Drawings associated with Issue 0:**

Drawing No	Pages	Subject	Rev.	Date
AM520I	5	SidePak AM520i Aerosol Monitor (IS ver.) BOM	B	-
6009036	1 of 1	COVER, FRONT, AM520	E	22-FEB-18
6009037	1 of 1	BOTTOM COVER, AM520	C	21-FEB-17
6009102	1	PCA AM520 BATTERY CONNECTION BOM	B	-
6011380	1	PCA IS AM520 MAIN BOM	A	-
6011382	1	PCA IS AM520 DISPLAY BOM	A	-
6011385	1	PCA AM520 BATTERY PACK BOM	B	-
10000034517	1 of 1	AM520I EXPLODED VIEW DRAWING	C	23 JUL 18
10000034518	1 of 1	BATTERY PACK, EXPLODED VIEW AM520i	B	23 JUL 18
10000035222	1 of 1	AM520 DISPLAY ASSEMBLY	B	23 JUL 18
10000043987	1 to 4 of 4	Assembly Procedure FOR 6011384	A	5/23/2018
10000044903	1 of 1	DECAL BATTERY PACK, AM520i/AM520	A	30 AUG 18
6009443	1 of 1	CLIP, BELT AM520	C	03 OCT 18
10000047890	6	MNL AM520 SIDEPACK AGENCY DWG !!SIMTARS!!	A	07/03/2019
10000045902	1 to 4 of 4	MEMBRANE SWITCH	A	16-NOV-18
10000047402	1 of 1	AM520i LABEL SET	A	10 MAY 19

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## Files associated with Issue 0:

Drawing No	Pages	Subject	Rev.	Date
10000032033	-	PCBA_Schematics_Assemblies_Gerbbers	B	-
10000043145	-	PCBA_Schematics_Assemblies_Gerbbers	B	-
10000043718	-	PCBA_Schematics_Assemblies_Gerbbers	A	-
10000044340	-	PCBA_Schematics_Assemblies_Gerbbers	A	-

Note: The files associated with Issue 0 contain scheduled documents saved in a ZIP files.

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