



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX SIM 19.0009X** Page 1 of 4 [Certificate history:](#)
Issue 0 (2019-07-22)

Status: **Current** Issue No: 1

Date of Issue: 2021-07-12

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)


12 July 2021

Date:

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 www.iecex.com or use of this QR Code.



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
locations:

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 equipment 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 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 Reports:

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

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

[GB/SIR/ExTR21.0086/00](#)

Quality Assessment Report:

[CA/CSA/QAR16.0008/03](#)



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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.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1:

- Updates to drawings not affecting certification
- Updates to rationalise the Manufacturer's Documents list

Annex:

[IECEX SIM 19.0009X-1 AM520i Annex.pdf](#)



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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

Files associated with Issue 0:

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

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Drawing No	Pages	Subject	Rev.	Date
1000044340	-	PCBA_Schematics_Assemblies_Gerbers	A	-

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

Drawings associated with Issue 1:

Drawing No	Pages	Subject	Rev.	Date
AM520I	5	SidePak AM520i Aerosol Monitor (IS ver.) BOM	C	-
6009036	1 of 1	COVER, FRONT, AM520	F	01-MAY-20
6009037	1 of 1	BOTTOM COVER, AM520	E	01-MAY-20
6009102AD	1	ASSEMBLY DRAWING AM520 BATTERY CONNECTION	B	AUG-20-2016
6009102SC	1	SCHEMATIC DIAGRAM - AM520 BATTERY CONNECTION	B	AUG-20-2016
6011380	2	PCA IS AM520 MAIN BOM	C	-
6011380AD	2	ASSEMBLY DRAWING AM520 MAIN NEW	C	SEP-10-2018
6011380SC	5	SCHEMATIC DIAGRAM PCA MAIN AM520 NEW	C	SEP-10-2018
6011382AD	1	ASSEMBLY DRAWING IS AM520 DISPLAY	A	MAY-23-2018
6011382SC	1	SCHEMATIC DIAGRAM - IS AM520 DISPLAY	A	APR-16-2018
6011385	2	PCA IS AM520/ BATTERY PACK	D	-
6011385AD	2	ASSEMBLY DRAWING AM520 BATTERY PACK	D	SEP-20-2018
6011385SC	1	SCHEMATIC DIAGRAM - PCA AM520 BATTERY PACK	D	SEP-20-2018

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Drawing No	Pages	Subject	Rev.	Date
10000035222	1 of 1	AM520 DISPLAY ASSEMBLY	C	22 OCT 20
10000043987	1 to 4 of 4	Assembly Procedure FOR 6011384	B	11-Nov-19

Files associated with Issue 1:

Drawing No	Pages	Subject	Rev.	Date
6009103	-	Gerber Files, Battery Connection PCB	A	-
6011381	-	Gerber Files, Main PCB	B	-
6011383	-	Gerber Files, Display PCB	A	-
6011386	-	Gerber Files, Battery Pack PCB	C	-

Note: The files associated with Issue 1 contain scheduled documents saved in a ZIP files.

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