



Certificate of Compliance

Certificate: 70177293

Master Contract: 200507

Project: 80035916

Date Issued: 2021-03-01

Issued To: TSI Incorporated
500 Cardigan Rd
Shoreview, Minnesota, 55126-3996
United States

Attention: Michael Hodges

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: Gary Benden
Gary Benden



PRODUCTS

CLASS 2258-03 PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations

**Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III; T4
Ex ia IIC T4 Ga**

AM520i Personal Aerosol Monitor
Rated: 12Vdc SELV, 3.0 A; 0°C to 50°C



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CLASS 2258-83 PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations - Certified to US Standards

Class I, Division 1, Groups A, B, C, D; T4
Class I Zone 0 AEx ia IIC T4 Ga

AM520i Personal Aerosol Monitor
Rated: 12Vdc SELV, 3.0 A; 0°C to 50°C

Conditions of Acceptability:

- i. The AM520i Personal Aerosol Monitor shall only be used in conjunction with battery pack assembly model number 803322.
- ii. 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 Um output voltage limit of [25 Vdc at 90 Watts].
- iii. 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.

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 61010-1-12
(reaffirmed 2017)

CAN/CSA C22.2 No. 60079-0:15

CAN/CSA C22.2 No. 60079-11:14

CAN/CSA C22.2 No. 60529:16

ANSI/UL 60079-0-2013

ANSI/UL 60079-11-2014

Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements - Third Edition; Update No. 1: July 2015; Update No. 2: April 2016
Explosive Atmospheres – Part 0: Equipment – General Requirements – Third Edition
Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “i” – Second Edition
Degrees of protection provided by enclosures (IP Code) – Second Edition
Explosive Atmospheres – Part 0: Equipment – General Requirements
Sixth Edition
Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “i”
Sixth Edition



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ANSI/UL 61010-1-2016

Safety Requirements for Electrical Equipment for
Measurement, Control, and Laboratory Use – Part 1:
General Requirements
Third Edition

ANSI/IEC 60529 - 2004

Degrees of Protection Provided By Enclosures (IP
Code)

(reaffirmed 2011)

ANSI/UL 913-2015

Standard for Intrinsically Safe Apparatus and
Associated Apparatus for
Use in Class I, II, III, Division 1, Hazardous
(Classified) Locations
Seventh Edition

MARKINGS



The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

The following markings shall appear on the AM520i Personal Aerosol Monitor:

- Manufacturer's name: "TSI Incorporated", or CSA Master Contract Number "200507", adjacent to the CSA Mark in lieu of manufacturer's name.
- Certificate Number: "18.70177293X" near CSA Mark or "CSA: 18.70177293X" if not near Mark.
- Model number: As specified in the PRODUCTS section, above.
- Electrical ratings: As specified in the PRODUCTS section, above.
- Ambient temperature rating: As specified in the PRODUCTS section, above.
- Manufacturing date in MMY format, or serial number, traceable to year and month of manufacture.
- The CSA Mark with or without 'C' and/or 'US' indicators, as shown on the Certificate of Conformity.
- Hazardous Location designation: As specified in the PRODUCTS section, above. The word "Class" may be abbreviated "CL", the word "Division" may be abbreviated "DIV", and the word "Groups" may be abbreviated "GRP" or "GP".
- Temperature code: As specified in the PRODUCTS section, above.
- Method of Protection markings (Ex -- markings): As specified in the PRODUCTS section, above.
- The following symbol:
 - ISO 3864 Symbol B.3.1  or ISO 7000 symbol 0434  (triangle with exclamation point)



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- WARNING – FOR USE ONLY WITH BATTERY PACK 803322
- AVERTISSEMENT - À USAGE UNIQUEMENT AVEC LE BLOC BATTERIE 803322

The following markings shall appear on the rechargeable Li-Ion Battery Pack 803322

- Manufacturer's name: "TSI Incorporated",
- Model number: 803322
- Electrical ratings: 3.7 volts, 5400 mAh
- WARNING – FOR USE ONLY WITH TSI MODEL AM520i
- AVERTISSEMENT - À UTILISER UNIQUEMENT AVEC LE MODÈLE TSI AM520i

Nameplate adhesive label material approval information:

The markings provided on the AM520i Personal Aerosol Monitor are provided on label B-423 manufactured by Brady. The markings provided on the battery pack are provided on label 7818 manufactured by 3M

Equipment is accompanied by the following documentation.

General: Technical specifications, instructions for use and details of where technical assistance may be obtained if required.

- Manufacturer's name and address

Equipment Ratings:

This includes equipment supply, description of I/O connections, duty cycle and operating environmental conditions.

- | | | |
|----|-----------------------|-----------------|
| 1. | Pollution degree | 2; |
| 2. | Installation category | III; |
| 3. | Altitude | 2000m; |
| 4. | Humidity | 5-95%. |
| 5. | Electrical supply | 12V SELV, 3.0 A |
| 6. | Ambient Temperature | 0°C -50°C |

Equipment Operation: This includes explanations of operating controls and warning symbols used, and instructions for interconnection, and cleaning and decontamination as required.

- A description of the intended use of the equipment.
- Statement that, if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- A statement that the safety of any system incorporating the equipment is the responsibility of the assembler of the system.
- Explanation of symbols related to safety which are used on the equipment;
- ISO 3864 Symbol B.3.1 attention or ISO 7000 symbol 0434 ISO 7000 Symbol 0434 (triangle with exclamation point) with a statement that the manual must be consulted in all cases where this symbol is



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marked, in order to find out the nature of the potential HAZARDS and any actions which have to be taken to avoid them.

- Guidance on how to determine that the equipment is functioning correctly;

Equipment Maintenance and Service: The documentation specifies the routine maintenance and service that can be performed by the end user. And the following:

- Instructions in sufficient detail to permit safe maintenance and inspection of the equipment, and to ensure continued safety of the equipment after the maintenance and inspection procedure.
- Specification of any parts which are required to be examined or supplied only by the manufacturer or his agent.
- Instructions on the following subjects shall be provided for service personnel, as necessary to permit safe servicing and continued safety of the equipment after servicing if the equipment is suitable to be serviced:
 - a) specific risks that may affect the service personnel.
 - b) protective measures for these risks.
 - c) verification of the safe state of the equipment after repair.



Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80035916	2021-03-01	<p>Update to Report 70177293 to correct the amp rating of the power supply from 2.5 amp to 3.0 amp, correctly identify the Maxon motor assembly number rather than the part number, include revised enclosure drawings, and revise a total of 9 drawings per FIR reports dated July 09, 2019 thru August 13, 2020.</p> <p>FIR follow-up, update to certificate 70177293 for non-conformance issues noted in FC# 200508, FIR's dated: July 9, 2019 thru August 13, 2020; descriptive drawing update needed, missing marking.</p>
000070177293	2018-09-18	<p>Original model certification for North American CSAc-us listing of the AM520i portable aerosol monitor for method of protection Intrinsic Safety with markings for Divisions "Class I, Div. 1, Groups ABCD T4" and Zones "(A)Ex ia IIC T4 Ga"</p>