




SIDEPAK™ AM520i PERSONAL AEROSOL MONITOR INTRINSIC SAFETY RATING

APPLICATION NOTE EXPMN-016 (A4)

The SidePak AM520i Personal Aerosol Monitor has been designed and tested to pass intrinsic safety requirements as established by multiple international standards for use in explosive and volatile environments. See app note EXPMN-017-“*Understanding Intrinsic Safety,*” for a basic explanation of intrinsic safety.

The SidePak AM520i monitor has been issued the following certifications:



IECEX / ATEX System Rating	Class / Division / Zone System Rating
 I M1 II 1G Ex ia IIC T4 Ga Ex ia I Ma	Certified to Canadian Standards: 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
International Certificate: IECEX SIR 18.0043X	Certified to US Standards: Class I, Division 1, Groups A, B, C, D; T4 Class I Zone 0 AEx ia IIC T4 Ga
EU Certificate: Sira 18ATEX2150X	CSA North America Safety Certificate: #70177293
Australia/NZ Certificate: IECEX SIM 19.0009X	



Explanation of Rating

IECEx / International including Australia

Ex ia IIC T4 Ga

Ex	Explosion Protection —Designed for use in explosive atmospheres
ia	Intrinsic Safety Protection Level —Limits energy of sparks & surface temperature
IIC	Gas / Atmosphere Group —(Hydrogen, Acetylene, carbon disulfide) rated for use with most flammable gases & vapors
T4	Temperature Class —Maximum surface inside the instrument temperature 135°C (275°F) during failure mode
Ga	Equipment Protection Level (EPL) —For use with Flammable Gases


Ex ia I Ma

Ex	Explosion Protection —Designed for use in explosive atmospheres
ia	Intrinsic Safety Protection Level —Limits energy of sparks & surface temperature
I	Atmosphere Group —Coal Mining including Methane (Firedamp) and Coal Dust
Ma	Equipment Protection Level (EPL) —Very high level of protection for mines

ATEX - European Union



I M1, II 1G

	Explosion Protection —Designed for use in explosive atmospheres
I M1	Equipment Group I Category M1 —Very High level of protection for Coal Mining including Methane (Firedamp) and Coal Dust
II 1G	Group II Category 1G —Very High level of protection for areas containing Gases, Vapors & Mists.

CSA - Canadian Standards

Class I, Division I, Group A, B, C, D

Class I	Hazard Class for Flammable Gases
Division I	Continuous Hazard —Continually Present or Likely to occur during Normal Operations
Group A	Flammable Gas —Contains Acetylene
Group B	Flammable Gas —Contains Hydrogen
Group C	Flammable Gas —Contains Ethylene
Group D.	Flammable Gas —Contains Propane

Class II, Division I, Groups E, F, G; Class III; T4

Class II	Hazard Class for Combustible Dusts
Class III	Hazard Class for Combustible Fibers and Flying(s)
Division I	Continuous Hazard —Continually Present or Likely to occur during Normal Operations
Group E	Combustible Metal Dusts
Group F	Combustible Carbonaceous Dusts
Group G	Combustible Dusts not in Group E or F (Flour, Grain, Wood, Plastics, Chemicals)
T4	Temperature Class —Maximum surface inside the instrument temperature 135°C (275°F) during failure mode (applies to all Class I/II/III)

Ex ia IIC T4 Ga (Zone System)

Ex	Explosion Protection —Designed for use in explosive atmospheres
ia	Intrinsic Safety Protection Level —Limit energy of sparks & surface temperature
Iic	Gas / Atmosphere Group —(Hydrogen, Acetylene, carbon disulfide) rated for use with most flammable gases & vapors
T4	Temperature Class —Maximum surface inside the instrument temperature 135°C (275°F) during failure mode
Ga	Equipment Protection Level (EPL) —For use with Flammable Gases

CSA - US Standards

Class I, Division I, Groups A, B, C, D; T4

Class I	Hazard Class for Flammable Gases
Division I	Continuous Hazard —Continually Present or Likely to occur during Normal Operations
Group A	Flammable Gas —Acetylene
Group B	Flammable Gas —Hydrogen
Group C	Flammable Gas —Ethylene
Group D	Flammable Gas —Propane
T4	Temperature Class —Maximum surface inside the instrument temperature 135°C (275°F) during failure mode

Class I, Zone 0, AEx ia IIC T4 Ga

Class I	Hazard Class for Flammable Gases
Zone 0	Use in Areas where Gas, Vapors & Mist are continually present
AEx	Explosion Protection (US only) —Designed for use in explosive atmospheres
ia	Intrinsic Safety Protection Level —Limit energy of sparks & surface temperature
IIC	Gas / Atmosphere Group —(Hydrogen, Acetylene, carbon disulfide) rated for use with most flammable gases & vapors
T4	Temperature Class —Maximum surface inside the instrument temperature 135°C (275°F) during failure mode
Ga	Equipment Protection Level (EPL) —For use with Flammable Gases

Summary

The SidePak AM520i monitor is Certified globally under IECEx/ATEX classification Schemes for use in atmospheres where flammable gases and combustible dusts are likely to occur during normal operations in quantities sufficient to cause a fire or explosion. This instrument can be used for the stated applications in any country globally that recognizes and accepts these certifications.

In Canada the SidePak AM520i monitor is Certified under CSA classification Schemes for use in atmospheres where Flammable gases, Combustible Dusts and Combustible fibers and flyings are continually present or likely to occur during normal operations.

In the United States the SidePak AM520i monitor is Certified under the North American Division & Zone Scheme for use in atmospheres where flammable gases are continually present or likely to occur during normal operations.

The SidePak AM520i monitor is certified for indoor use and is not certified for protection against rain, dirt, sleet, snow, or windblown dust.



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TSI Incorporated – Visit our website www.tsi.com for more information.

USA Tel: +1 800 680-1220
UK Tel: +44 149 4 459200
France Tel: +33 1 41 19 21 99
Germany Tel: +49 241 523030

India Tel: +91 80 67877200
China Tel: +86 10 8219 7688
Singapore Tel: +65 6595 6388

