



# SIDEPAK™ AM520i

## PERSONAL AEROSOL MONITOR


### INTRINSIC SAFETY RATING

APPLICATION NOTE EXPMN-016 (US)

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	<b>Certified to Canadian Standards:</b> 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  <b>Certified to US Standards:</b> Class I, Division 1, Groups A, B, C, D; T4 Class I Zone 0 AEx ia IIC T4 Ga

## Explanation of Rating

### IECEX

#### Ex ia IIC T4 Ga

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




**Ex ia I Ma**

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

**ATEX - European Union**



**I M1, II 1G**

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

**CSA - Canadian Standards**

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

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

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

<b>Class II</b>	<b>Hazard Class for Combustible Dusts</b>
<b>Class III</b>	<b>Hazard Class for Combustible Fibers and Flying(s)</b>
<b>Division I</b>	<b>Continuous Hazard</b> —Continually Present or Likely to occur during Normal Operations
<b>Group E</b>	<b>Combustible Metal Dusts</b>
<b>Group F</b>	<b>Combustible Carbonaceous Dusts</b>
<b>Group G</b>	<b>Combustible Dusts not in Group E or F</b> (Flour, Grain, Wood, Plastics, Chemicals)
<b>T4</b>	<b>Temperature Class</b> —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)

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

### CSA - US Standards

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

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

#### Class I, Zone 0, AEx ia IIC T4 Ga

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

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## 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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