



® Knowledge Beyond Measure.

# SidePak™ Personal Aerosol Monitor

Models AM520 and AM520i



**The SidePak™ AM520 and AM520i Personal Aerosol Monitors are compact, battery-powered, data-logging photometers that provide real-time aerosol mass concentration measurements in a worker's breathing zone.**

These monitors are the perfect solution for real-time, personal aerosol sampling in a variety of workplace environments, including but not limited to general industry, foundries, construction sites, pre-cast concrete and cement, chemical plants, refineries, petrochemical, power and utilities, transportation, aerospace, maritime, confined spaces and mining. For monitoring in flammable and explosive environments—Model AM520i is the smallest intrinsically safe real-time photometric personal exposure monitor currently available on the global market.

Newly designed inlet conditioners increase the mass concentration capability and provide size fraction cut points for PM10, Respirable (PM4), PM5 (China Respirable), PM2.5, PM1 and 0.8 $\mu$ m Diesel Particulate Matter (DPM).

## New Features and Benefits

- Dual display and logging of mass concentration and response concentration on one screen
- Stores up to 10 custom calibration factors on the instrument for different applications
- **TrakPro™ v5 Data Analysis Software** updated with:
  - Custom calibration factor calculator to simplify calibration factor process
  - Continued ability to name custom calibration factors and upload them to the instrument
  - Enhanced alarm features to include response concentration alarm value

## Features and Benefits

- Real-time mass concentration and secondary response concentration measurement and data logging for "in-the-field" data analysis of multiple aerosols
- Push button menu operation or programmable through newly improved **TrakPro™ v5 Data Analysis Software**
- User-selectable alarm levels to alert workers to high aerosol concentrations
- Newly designed robust impactors enable reliable size fraction measurements at higher aerosol concentrations over longer run times
- Model AM520i designed and tested to pass Intrinsic safety requirements as established by IEC (International Electrotechnical Commission)— see TSI® App Note EXPMN-017 for a basic understanding of intrinsic safety



## Specifications

# SidePak™ Personal Aerosol Monitor

Models AM520 and AM520i

### Sensitivity

Sensor Type 90° light scattering, 650 nm laser diode  
Calibration Calibrated against a gravimetric reference using the respirable fraction of standard ISO 12103-1, A1 Test Dust

Aerosol  
Concentration Range 0.001 to 100 mg/m<sup>3</sup>  
Particle Size Range 0.1 to 10 µm  
Minimum Resolution 0.001 mg/m<sup>3</sup>  
Zero Stability ±0.001 mg/m<sup>3</sup> over 24 hours using 10 second time constant  
Temperature Coefficient Approximately +0.0005 mg/m<sup>3</sup> per °C (for variations from temperature at which instrument was last zeroed)

### Flow Rate

Range User-adjustable, 0 to 1.8 liters/min (L/min) Note: Upper range is dependent on impactor or cyclone attached to the SidePak™ AM520/520i Monitor

### Temperature Range

Operating Range 32° F to 120° F (0° C to 50° C)  
Storage Range -4° F to 140° F (-20° C to 60° C)  
Operational Humidity 0 to 95% RH, non-condensing  
Battery Charging 32°F to 113°F (0°C to 40°C)

### Time Constant (OLED Display)

Range User-adjustable, from 1 to 60 seconds  
Charging 32°F to 113°F (0°C to 40°C)

### Built-in Inlets

Standard inlet Not size-specific  
PM1.0 impactor 50% cut-off at 1.0 µm  
PM2.5 impactor 50% cut-off at 2.5 µm  
PM5.0 impactor 50% cut-off at 5.0 µm  
PM10 impactor 50% cut-off at 10.0 µm

### Attachable Cyclones

4 µm Dorr-Oliver 50% cut-off at 4.0 µm  
0.8 µm DPM 50% cut-off at 0.8 µm

### Alarms

Alarm Types General, STEL  
Default Settings 0.5 mg/m<sup>3</sup>, 1 mg/m<sup>3</sup>, 3 mg/m<sup>3</sup>, 5 mg/m<sup>3</sup>, 15 mg/m<sup>3</sup>, Off  
Programmable 0 - 100 mg/m<sup>3</sup> via TrakPro™ v5 Software  
Alarm Indicator 95 dBA (at one foot) audible horn, blinking red LED, flashing red OLED display  
Ringback Delay 30 sec, 1 min, 3 min, 5 min, 10 min, Off

### Data Logging

Data Points Approx. 80,000 (55 days logging once per minute)  
Logging Interval User-adjustable, from 1 second to 60 minutes

### Communications Interface

Type USB 2.0  
Connector, Instrument USB Micro-B (socket)

### User-Select Calibration Factors

Factory Setting 1.0 (non-adjustable)  
Ambient Setting 0.38 (non-adjustable)  
User-Defined Settings 10, with user-defined labels via TrakPro™ v5 Software  
Range 0.1 to 10.0, user-adjustable

### Physical

External Dimensions 5.1 x 3.7 x 3.1 inch  
129.5 mm x 94 mm x 78.4 mm with 803322 battery  
Weight 22 oz (0.62 kg) with 803322 battery  
Display 160 x 128 resolution color OLED display  
Tripod Mounting Nut ¼"-20 female thread

### Battery Pack (Model AM520 p/n 803300, Model AM520i p/n 803322)

Rating 5100 mAh Li-Ion Pack  
Run Time Greater than 20 hours at 1.7Lpm with a PM2.5 impactor  
Charge Time 4.0 hours (typical with a fully depleted battery)

### Power Supply (p/n 803302)

Input Voltage Range 100 to 240 VAC, 50 to 60 Hz  
Output Voltage 12 VDC @ 3.0A

### Maintenance

Factory Clean/Calibrate Recommended annually  
User Zero Calibration Before each use  
User Flow Calibration As needed with use of Primary Flow Calibrator 4146

### Minimum Computer Requirements for TrakPro Software

Communications Port Universal Serial Bus (USB) v2.0 or higher  
Operating System Microsoft Windows® 7, 8, or 10 (32-bit or 64-bit) operating systems

### Approvals



Model AM520



Model AM520i

Immunity  
Emissions  
Safety

EN61326-1:2013  
EN61326-1:2013 Class B  
IEC 61010-1:2010  
IEC 60825-1:2014



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## Intrinsically Safe SidePak™ AM520i Personal Aerosol Monitor

See specifications sheet for more details. Rated for use in atmospheres known to contain flammable gases and vapors, flammable fibers and flammable dust.

Explanation of intrinsic safety rating — Global Zone Rating: Ex ia IIC T4 Ga (see TSI App Note EXPMN-016 for further explanation of Model AM520i intrinsic safety rating and see TSI App Note EXPMN-017 for a basic understanding of intrinsic safety)

Certifications — IECEx, ATEX, CSA, IECEx SIM-19.0009X