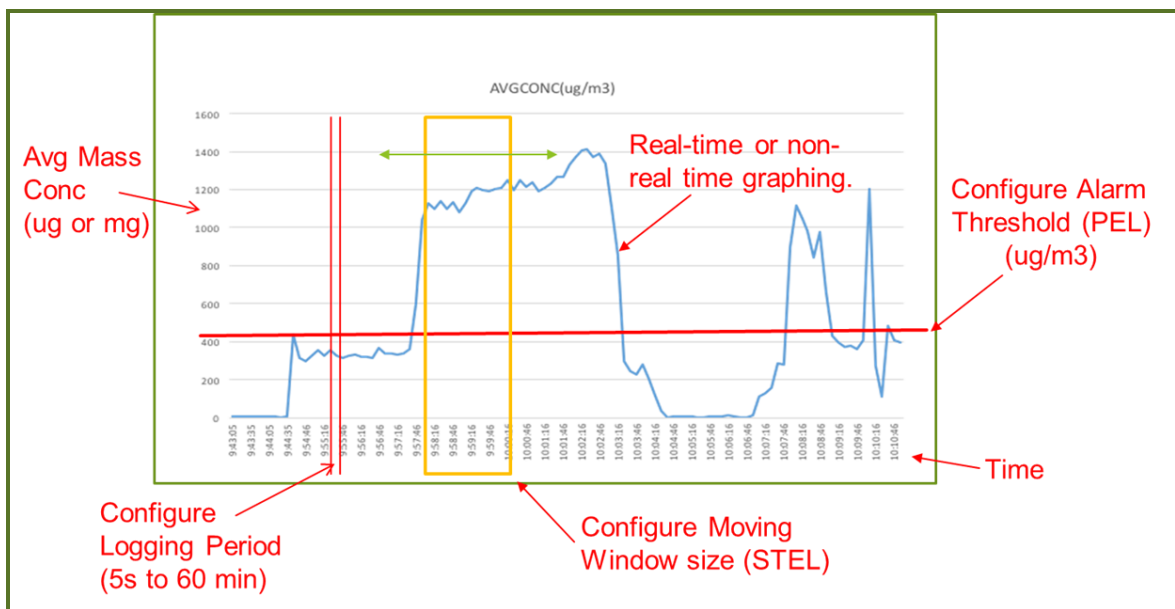nanozen
know the air you breathe

FEATURE DESCRIPTION: MOVING WINDOW AVERAGE

OVERVIEW

The mass-concentration Moving-Window Average (MWA) is the average of a pre-set number of previous log mass-concentration readings. The logging period set by the user plus the number of logs that are averaged determines the size of the Moving-Window in minutes.

The default factory-setting is a logging period of 1 minute and a Moving-Window size of 15 logs. This makes the factory default MWA 15 minutes long.

The Moving-Window size can be set by the user to be between 1 and 200 logs. The logging period can be set by the user to be between 5 and 3600 seconds.
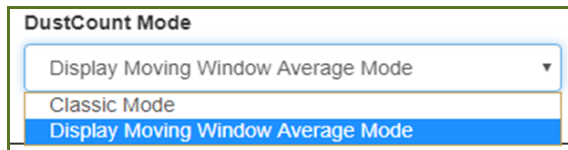

Example 8 Hour Shift showing a Moving Window with Real Time Data + Mass Concentration vs. Time

MOVING WINDOW AVERAGE – USE CASE

The MWA is useful for determining whether the maximum mass-concentration permitted during a given time slot was exceeded at any time. This can be monitored in real-time without losing the finer granularity of mass-concentration averages for each logging period. Short bursts of high dust concentration can be tracked with the logging period averages, while maximum safety limits can be monitored with the Moving-Window average.
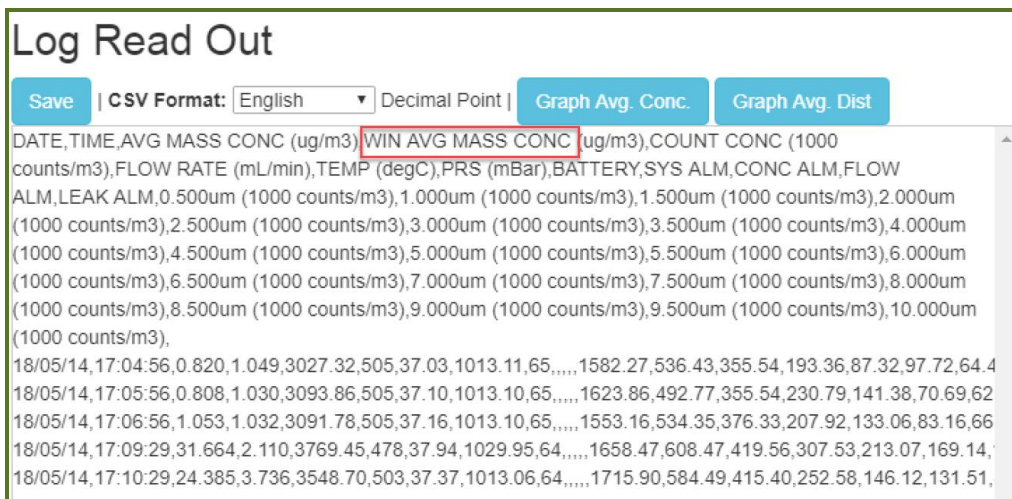
MOVING WINDOW AVERAGE – LOGGING FUNCTIONALITY

By default, the DustCount is configured to operate in Classic Mode. In this mode the DustCount logs the average mass concentration (AvMC), taken over the previous logging period. The DustCount can be configured to log the moving window average of average mass concentration for the logging periods (WAvMC), by changing the DustCount Mode to Display Moving Window Average Mode via the User Interface.

Enabling MWA mode on the DustCount via the UI drop-down selection

The log file will now contain a new column labeled "WIN AVG MASS CONC" to the right of the average mass-concentration column "AVG MASS CONC". For the factory default case the "WIN AVG MASS CONC" value will be the average of the last 15 1-minute mass-concentration values.

DustCount User Interface Log Read Out screen with WIN AVG MASS CONC.

In Moving Window Average display mode, the Mass-concentration alarm in the log file is triggered from the windowed average mass-concentration "WIN AVG MASS CONC" value for each log entry.

MOVING WINDOW AVERAGE – DUSTCOUNT DISPLAY AND ALARM FUNCTIONALITY

In Moving Window Average Display mode, the label on the LCD screen changes to WAvMC (Windowed Average Mass-concentration). The audible mass-concentration alarm is triggered by the displayed Moving-window average mass-concentration.