PQ100
EPA Approved
PM Sampling System

AKRULOGIC
Environmental & Process Monitoring Solutions

Applications:

EPA Reference Method for PM10 Sampling (Designation No. RFPS-1298-124)
Easily Configurable for Ambient PM2.5 and Total Suspended Particulates (TSP)
Complies With New Lead Sampling Method (CFR40, Part 50, Appendix Q)
Suitable for Metals, Asbestos, Oil Mists and Indoor Air Pollutants
Permanent Deployment or Portable Use

Features:

Automatic Flow Control (2.0 to 25.0 LPM)
Flow Rate Precision of ±2.0%
Operates Without AC Power
Built-In 24-Hour Sampling Battery
Straightforward Deployment and Programming
Modular Configuration

The PQ100 is the only EPA-approved PM sampling system that will operate without AC power. A complete PQ100 system consists of a sampling module, filter holder, size selective inlet, tripod base and AC adapter. The centerpiece of this system is the microprocessor based sampling module, which incorporates the sample pump, digital display, keypad, flow controller and on-board battery.

The sampling module operates on 12VDC. The internal battery is suitable for most 24 hour sampling events. If AC power is not available to charge the instrument, power may be supplied via an external battery. For many applications, the optional solar panel will charge the unit for subsequent sampling events.

Compared to high volume samplers, the PQ100 is significantly smaller, quieter and requires less intervention and maintenance. Taking all the features into account, the PQ100 sampler can be deployed virtually anywhere, both indoors and outside. It is suited for applications that require field portability plus regulatory compliance.

Operation - Prior to a sampling event, the operator selects the start time, duration and flow rate. Upon completion of the event, the PQ100 will display all the relevant information, including elapsed time, average flow rate and total sample volume. An RS232 port is available for event programming and data retrieval with PQ100 software. The automatic flow control system eliminates the need for flow corrections and look-up tables.

Calibration - The flow control system of the PQ100 assures that the sampling rate is maintained to ±2.0% of setpoint. For regulatory sampling purposes, the nominal PQ100 flow rate is 16.7 LPM. However, the instrument can be programmed to operate between 2.0 and 25.0 LPM. Calibration of PQ100 is quickly accomplished via the keypad and display.

Modular Design - A typical PQ100 installation includes the tripod base complete with a size selective inlet. The PQ100 is designed such that its components can be quickly exchanged in the field. The sampling module easily connects to a variety of inlets, cyclones, cartridges and filter holders. For certain applications it may be advantageous to locate the sampling module indoors and install the inlet outside.

Options - Standard systems include either the PM10 Size Selective Inlet or the Louvered TSP Inlet. Optional inlet components include a TSP cap, sharp cut cyclones for $PM_{1.0}$ or $PM_{2.5}$, impactors, inlet extensions and alternative filter holders. External battery cables and solar panels are available for substitute power requirements.

Filter Media & Analysis - The PQ100 filter accommodates 47mm diameter filter membranes. Teflon, quartz, glass fiber and MCE filters can be utilized. For gravimetric analysis, quartz and glass fiber can be used for PM_{10} and TSP, respectively. For $PM_{2.5}$, Teflon filter media is recommended. For chemical speciation of PM samples, filter material selection is defined by the lab method.