Envirotech
We Care for Better Air

APM 1000

NEED

Many regulatory bodies in India have mandated continuous monitoring of PM10 in areas like mines, stone crushers, cement plants etc. Envirotech APM 1000 PM10 analyser uses the proven technology of Beta ray attenuation and is very cost effective, rugged, reliable and very suitable for local site operations. Instrument has features of transfer of on-line monitoring data to the portals of regulatory bodies.

APPLICATION

Envirotech APM 1000 PM10 Analyser is based on approved technology of BAM and very ideal for continuous monitoring of PM10 in Residential & industrial installations, mining areas and local site operations

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WORKING PRINCIPAL

The PM10 Analyser automatically measures and records airborne particulate concentration levels of PM10 (in milligrams or micrograms per cubic meter) using the principle of beta ray attenuation. Each hour, a small 14C (Carbon-14 or Krypton 85) element emits a constant source of high-energy electrons (known as beta rays) through a spot of clean filter tape. These beta rays are detected and counted by a sensitive scintillation detector to determine a zero reading. The Monitor automatically advances this spot of tape to the sample nozzle, where a vacuum pump then pulls a measured and controlled amount of dust-laden air through the filter tape, loading it with ambient dust. At the end of the hour this dirty spot is placed back between the beta source and the detector thereby causing an attenuation of the beta ray signal which is used to determine the mass of the particulate matter on the filter tape and the volumetric concentration of particulate matter (PM10) in ambient air

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FEATURES

- Design of gas path keeps filter paper, radioactive source and detector immov able during enrichment and measurment, ensuring good lower detection limit.
- US EPA standard beta ray attenuation method, which spares the complicated operations of TEOM, such as manually replace filter paper and weight. Compared to light scaterring method, it has higher measurment accuracy.
- Cutter, based on simulation verification of aerodynamics, will provide various selection of accurate . particle. sizes; PM1, PM2.5, PM10, TSP
- Sampling flow is measured by mass flow sensor and corrected with collected ambient temperature . and pressure to get the sampling flow of the field condition.
- Use C14 sources which is low density, low activity and long half-life to realize stable measurment. No radioactive contaminations will be caused.
- Flexible paper-pressing structure. Mechanical driving design is simple and reliable; greatly reduce paper breaking and paper jam and avoid the error caused by the moving of filter paper.
- pipeline heating system is used to ellminate interference from ambient humidity and make the detector fit into sudden change of the weather.
- Flow control system with precise closed loop feedback; stable sampling flow and small error.
- Low maintenance frequency, once a year. measurment accuracy.

SPECIFICATIONS

Measurement Principle		Beta ray attenuation method
Performance Index	Measuring Range	0~1000 µg/m³ or 0~1000 µg/m³(optional)
	Radioactive source	^{14}C (carbon - 14) radioactivity ≤ 60µCi
	Accuracy	≤5%
	Display Resolution	1µg/m³
	Lower Detection Limit	5 µg/m³
	Flow Error	≤ ± 2% (generally set at 16.67L min)
	Sampling Flow Stability	≤ ± 2% working point flow /24h
	Sampling Period	≤ 1h (time is sattable)
	Sampling Flow	Default 16.67 L/min
	Parallelism	PM 10≤10%, PM 2.5≤15%
Filter Paper Tape	Filter Paper Tape	Glass fibre, inner diameter:40mm,width:30mm, 1service umc 1 month (work period 1 h)

1 Year Warranty

*Specifications are subject to change without any prior notification

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Interface Param	Communication Interface	Rs 232, Rs 485, 4-20mA, GPRS (optional)
	Data Storage	One year
Working Condition	Cutting	Ambient temperature (-40°C ~50°C), ambient pressure(80~106)kPa
	Detector	Ambient temperature (5°C ~40°C), ambient pressure(80~106)kPa, humidity (≤90%)
Power Supply	AC(220±22)V, (50±1)Hz	
Dimension & Weight	483x407x322(mm) (L x B x H)	Monitor 30kg Pump 8kg

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Year Warranty

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