

Fine Particle Monitor FPM1



- ◆ **Detects Fine Particles in water**
- ◆ **Sensitive to Particles over 2 μm**
- ◆ **Indicates filter break through**
- ◆ **Warns of possible Cryptosporidium**
- ◆ **Low Cost**

Features of the FPM

- *Indicates the Particle Index for water.*
- *Warns of the presence of small particles.*
- *Sensitive to particles in the range 2 - 20 μm .*
- *Local display with alarm outputs.*
- *Can be connected to data acquisition systems.*
- *In-field calibration and verification facility.*
- *Bubble removal signal processing.*
- *4-20mA data output and RS232 data option.*

An Overview

The Fine Particle Monitor, FPM1, identifies the presence of particles above 2 microns in diameter for the routine monitoring of water supplies. Particles which are found in this size range include pathogenic organisms such as Cryptosporidium and Giardia. FPM1 therefore provides an early indication of the presence of particles which may include these harmful oocysts.

The instrument is ideal for on-line monitoring of water filters, providing an alarm if the filter fails. This type of monitoring has been recommended by the Badenoch committee in the UK for water supply filters.

FPM1 measures the Particle Index of sampled water. A high Particle Index indicates the presence of fine particles which can occur following filter breakthrough at water treatment plants. Under these circumstances, potentially harmful pathogens can pass into the water supply. FPM1 provides an immediate display of the particle content of the water together with an alarm if this should rise to unacceptable levels.

Optional Features

- *Attended or unattended mode*
- *Serial Interface version*

Applications

- *Continuous monitoring of filter integrity.*
- *Immediate detection of potentially harmful particles.*
- *Detection of particles above 2 μm .*
- *Continual measurement of water purity.*

About the FPM

The FPM1 monitors water which is passed continuously through a plastic sample tube clipped into the inspection head on the side of the unit. A narrow beam of light is passed through the sample tube so that fine particles cause fluctuations in the light reaching the detector. These fluctuations are analysed by the FPM1 processor to provide a continuous reading of the Particle Index. The PI reading is independent of the rate of flow through the sample tube in the range 20 and 200ml/min.

The system has built-in digital signal processing to prevent bubbles and individual large particles from influencing the measurement.

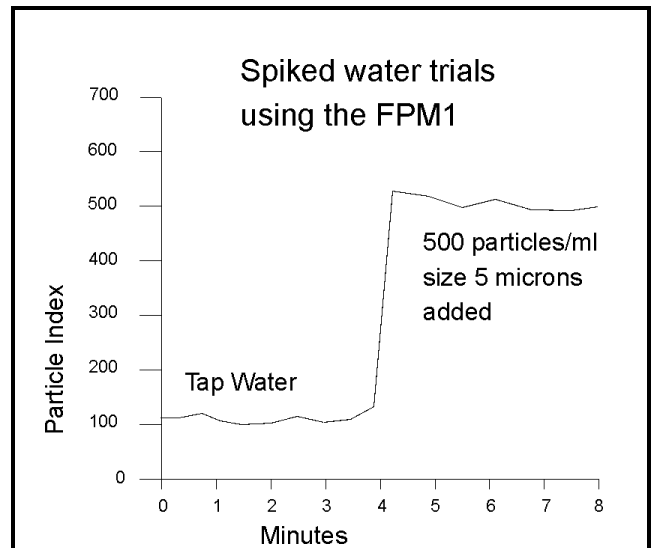
Particle Index

The Particle Index (PI) of water is a measure of the number and size of particles present. The PI increases with the square root of the number of particles, and linearly with increasing scattering cross section of the particles. A PI value of 500 is defined to occur if 500 latex spheres/ml with a diameter of 5 microns are passed through the monitor. Tap water normally gives a PI below 100.

Water usually contains many more particles with sizes below 1 micron than above. Turbidity meters are predominantly influenced by the presence of sub-micron particles. Measurements of turbidity are relatively insensitive to particles with diameters greater than 1 micron and do not reliably indicate the presence of particles with sizes in the 2 - 20 micron range. FPM1 ignores sub-micron particles and is sensitive to particles above 2 microns. This enables FPM1 to clearly indicate the contamination of water which may be caused by filter break through.

Specification

Range:	0 to 4000 PI
Typical value for tap water:	50 to 100 PI
Alarm Level:	0 to 3000 PI
Alarms:	Two volt free contacts to indicate lower and upper alarms
Alarm delay:	1 minute
Interface:	4-20mA and Serial Interface
Calibration:	Automatic or on demand
Power Supply:	115 or 230 Volts AC or 24 VDC
Monitor Size:	160 x160 x 90mm
Weight:	1.5 kg
Warranty:	12 months
Approvals:	CE



Ordering Options

Fine Particle Monitor - FPM1
 Fine Particle Monitor with Serial Interface - FPM1-S

Distributed by:

DIVERSE

Kingfisher House, High Green, Gt. Shelford, Cambridge CB2 5EG
 Tel: +44 (0)1223 84 44 44, Fax +44 (0) 1223 844 944
 EMail: sales@diverse-technologies.net
 Web: <http://www.diverse-technologies.net>