

Particle Counting System PCS2000



- ◆ **Cost Effective Particle Counting**
- ◆ **Low Cost of Ownership**
- ◆ **Easy to Use**

Features of the PCS2000

- **Continuous, on-line, real time particle counting. Detects 2µm to 50µm sized particles in eight size ranges. Can satisfy regulatory requirements.**
- **Modular networked system to which particle counting sensors can be added or removed. 1 to 16 particle counting heads report simultaneously to a main data monitoring unit.**
- **Each particle counting sensor offers user selectable particle size range and alarm conditions. Two different alarm levels can be set by the user.**
- **Both high speed and slow response options available**
- **Flow through cell technology for low maintenance costs. Standard BSP connections to water sample tube.**
- **Easy to install. Self diagnostic capability. Two spare inputs on the sensor head.**

An Overview

PCS2000 is a particle counting system that will do the work of up to sixteen particle counters and a data logger.

This new modular format makes continuous, on-line particle counting viable and the flow through cell design ensures low cost of ownership.

A choice of sensor heads is available. The fast response head gives a rapid reaction with 20 second updates. The slow response head provides a particle count averaged over 100 seconds.

PCS2000 can monitor particle concentrations across a membrane filter to demonstrate log reduction of particles.

Each sensor provides alarms when the particle density exceeds a user defined value.

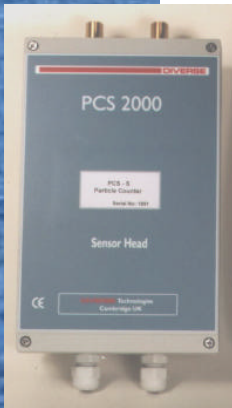
Optional Features

- *PC data collection*
- *Modem interface to allow the particle counting system to be monitored remotely*
- *OEM configuration*
- *Log reduction configuration*
- *Pressure transducer input*

Applications

- *Drinking Water Monitor for Regulatory Compliance*
- *Filter Integrity and Automated Filter Closedown*
- *Clean water manufacturing systems*
- *Log Reduction*

About the PCS2000



PCS2000 Sensor Head

PCS2000 sensor heads use laser obscuration in a transition cell to measure the particles.

The sensors (1-16) each have a unique address and are configured as a 4 way daisy chain cable carrying both power and communications. The maximum length of this daisy chain from the data monitor is 50m.

The system continuously monitors the signal levels from the detection system and compensation is made for the effects of progressive coating by salts in the water.

Complies with ASTM-F658-87 (1992) test protocol for particle counters. Recommended on-site maintenance period is 6 months.

Ordering Options

Data monitor:	PCS-M
Data monitor with modem:	PCS-M-MOD
Data monitor with log reduction:	PCS-M-L
For dc option add "24V" to any of the above e.g.	PCS-M-24V
Slow response sensor head:	PCS-S
Pressure sensor input:	PCS-S-P
High speed sensor head:	PCS-H
Serial software:	PCS-PC-Serial
Remote software:	PCS-PC-Remote
Mount & bubble trap/flow controller	PCS-IK
Calibration kit-standard particle dose	PCS-Cal

OEM Application

The system can be configured for a variety of OEM applications, tailoring the performance to the needs of the individual customer. Specifications and costs will vary depending upon the selected options.

OEM options include:

- * User specified particle pot ranges e.g. 3-7µm, or 2µm+
- * Modem data log access.
- * Additional I/O capability.
- * Alternative particle data analysis, e.g. Event period suppression and backwash lockout.
- * Sensor enclosures to suit the installation.
- * PC control and parameter programming.

Sensor Head Specification

Base size ranges:	2-3,3-5,5-10,10-15,15-20,20-25, >2µm, >25µm
Option:	3-7µm
Sensing method:	Laser obscuration method
Laser wavelength:	780nm, power 3mW
Counting method:	High density PAL with processor interrogation
Statistical basis:	Homogeneous distribution assumed, so that fractional volume measurement is valid. Bayesian update of best estimate
Coincidence limit:	33,000 particles per ml
Counting accuracy:	+/-10% at half scale, +/-20% at full scale
Size allocation:	+/-10% for 5µm latex spheres
Sample time:	20 seconds (high speed) or 100 seconds (slow)
Flow rate:	Between 10 and 60ml/min (typically 20ml/min)
Calcification:	Automatic compensation Error warning if too great
Cleaning:	Simple pipe brush
Calibration verification:	Calibration kit available
Sensor address:	4 way switch
Power:	24V supplied from monitor
Enclosure:	Anodized aluminium with 1/4" BSP fittings
Size and weight:	230x140x70mm / 1.2kg
Labelling:	Laser class and wavelength warning

Monitor Specification

Display:	20x4 character backlit LCD. LED bar graph status for alarms
Particle display:	Total particle density per ml, Total absolute particle count, Particle density for each collection pot
Alarms:	Individually settable for each node
Alarm levels:	Warning and full alarm levels
Alarm Delay:	Settable 1 to 99 minutes
Sensor detection:	Automatically scanned
Sensor control:	Individual sensors can be disabled
Log reduction:	Option for dual sensor systems
Logging database:	Last 600 samples re-circulating
Logging:	Variable 1 to 120 minutes
Clock:	1 second resolution; year 2000 compliant
Enclosure:	Robust case with latched transparent front cover
Interface:	Outputs: 2 x 4-20mA programmable
Interface options:	RS232 and modem options
PC software option:	Collect and display data
PC control option:	Activate instrument functions remotely
Power:	85V to 265V ac or 24V dc
Size and weight:	200x300x185mm / 2Kg
Environmental:	IP65, 0-30C operating, 90% RH non-condensing
Warranty:	12 months
Approvals:	CE

DIVERSE

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