

2200 PCX Online Particle Counting Sensor



Look to the leader for your filtration monitoring solution. The Hach Model 2200 PCX is the first particle counter designed specifically to meet the unique requirements of water treatment.

The Model 2200 PCX can be integrated into your plant control system, or used with our Water Quality Software products, or both, in parallel. Collected data can be utilized for optimizing chemical dosage, backwash cycles, and filter-to-waste times. Particle count reports can also be used to apply for removal credits and filter high-rate studies.

Monitoring the efficiency of your filtration process has never been easier or more affordable! Early detection of filter breakthrough, monitoring of backwash, and demonstrating efficiencies of high-rated filters are only a few of the immediate uses for HACH's particle counting system. All-in-all, the system is an ideal tool for helping you improve your water treatment/production process.

The 2200 PCX is equipped with a local display of particle counts. If you are operating the 2200 PCX in the standalone mode or with the Hach "VISTA" data collection software program, the display indicates the "normalized" count (counts/ml) based on the selected size range, count period and flow rate. These parameters are either set in the 2200 PCX or set by the data collection software. If operating with analog connection to SCADA, the display is total counts over total volume. This displayed information is useful for detecting filter problems with a quick check of "localized" counts at selected stations.

Each sensor can accept up to 8 analog inputs from other devices, i.e., pH, turbidity, etc. Then inputs are digitized and transmitted within RS485 output along with particle count data.

Each Model 2200 PCX is backed by the most experienced and knowledgeable technical and support staff in the industry. Select the choice of more engineering firms, state agencies, filter manufacturers, and water producers than any other particle counter worldwide—the Hach Model 2200 PCX.

- Volumetric—all particles pass through the sensing area
- Supports up to 32 size channels and 8 analog inputs (turbidity, pH, etc.)
- Operates stand-alone or as part of a networked system



**THERE'S ONLY ONE
WAY TO BE SURE**



Specifications

Counting Range	2-750 microns
Maximum Count Displayed	9,999,999 (totalized count, updated at end of each count cycle)
Counting/Transmitting Mode	Cumulative/differential
Flow Rate	100 mL/minute
Maximum Pressure	65 psig, not more than 1 minute; 55 psig continuous
Sample Time	1 second to 24 hours
Hold Time	1 second to 24 hours
Zero/Span (20 mA f.s. output)	Programmable - 1 to 9,999,999 counts
DC Inputs to 2200 PCX	+15 v @ 195 mA (3 W max.) -15 v @ 40 mA (0.6 W max.) +5 v @ 55 mA (0.3 W max.)
Computer Settings	9600 baud, no parity, eight data bits, one stop bit
Fluid Connections Inlet	Barbed fitting with self-sealing quick disconnect for 1/4" O.D. tubing
Fluid Connections Outlet	Quick disconnect for 1/4" O.D. tubing
Power	100-115VAC; 50-60 Hz
Dimensions	13.8"H x 8.3"W x 7"D
Weight	
Plug-in Supply (standard)	6"H x 3"W x 3"D

Ordering Information

2200 PCX Particle Counter w/ Analog and Water Weir	57050-00
2200 PCX Particle Counter w/ Water Weir	57040-00
V1.1 Vista/VistaNet Software—Windows 95/98/NT	57015-01

The awarded manufacturer shall provide a particle counting system which shall consist of sensor/counters, flow controllers, data collection software, computer, graphics printer, tubing and communications cabling for installation by the owner.

SENSOR/COUNTER

Configuration. Each remote unit will consist of a sensor, capable of viewing particles from 2 to 750 micron in diameter, and counter electronics capable of counting the particles in 32 discrete size bins. The components shall be housed entirely in a NEMA 4X enclosure, leaving no part of the sensor exposed to the risk of potential damage. An external power supply shall be provided. AC power shall not be present in any enclosure containing the sample stream.

Sensor Design. Sensors shall be laser-illumination, light-blocking type. All sensors shall be volumetric, the sensing area shall be the entire cross-section of the sample flow path. Manufacturers shall include, as part of their bid, a statement as to the percentage of the total sample flow their proposed sensor monitors. To maintain high concentration capability the cell shall be no larger than 850□X 850□

Optical Material. The optical materials shall have a minimum internal light transmittance of 99.0%.

Calibration & Performance. Sensors must be calibrated per ASTM F 658, using NIST traceable PSL spheres from Duke Scientific, and have size resolution of better than 10% (5% preferred) at 10 microns (per USP 788).

Counter Electronics. The counter shall have a minimum of 6-digit capacity (i.e. 999,999). Electronics shall have 12-bit A/D resolution be usable as a Pulse Height Analyzer. It shall be capable of self-timing and operating as an independent device.

Local Indication. Each sensor/counter shall have a digital display of particle counts and red LED indication of power and calibration status.

Maintenance. Sensor flowpath must be of sufficient dimensions, minimum of 700□X 700□ so as to be cleanable by brush. The sensor cleaning procedure must be performed without opening the enclosure. Sensor shall have a field replaceable cell which can be installed by an operator without requiring any special tools. One spare cell will be provided with the system.

Communications. Sensor/counters shall communicate using RS485 serial communications, with the farthest located up to 4000 feet from the data collection system. Particle count data shall be transmitted in raw, total counts not normalized to counts per mL. Each sensor/counter shall accept analog input signals from other measurement devices such as turbidimeters, flow meters, etc. This input data will be transmitted serially to the data collection system along with the particle count data.

FLOW CONTROLLERS

The flow controllers shall be capable of maintaining a constant 100 mL/minute flow rate to the sensor without the use of a valve or other line restriction. In order to minimize particle dropout and ensure sample integrity, the flow controller must be operated at sample feed flow rates of up to 2 liters per minute. To prevent air binding, the inside dimension of the chamber shall be a minimum of 1/2". An in-line strainer shall be provided for each sensor monitoring a raw or settled water source.

SOFTWARE

Operating System. The software shall be 32-Bit, Windows-based, utilizing point and click operation and shall be compatible with both Windows 95 and Windows NT.

For current price information, technical support and ordering assistance, contact the Hach office or distributor serving your area.

Hach Company is
ISO 9001 Certified

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