

HIAC PM4000

ON-LINE LIQUID PARTICLE MONITORS



***Extend machine life,
reduce downtime***

Features

- Long life laser diode for exceptional performance and instrument life
- Real-time contamination and condition information for quicker decision making
- High temperature and pressure capabilities for harsh environments

Benefits

- Total productive maintenance strategy (TPM)
- Predictive maintenance (PdM)
- Trend wear debris level assessment
- System dynamic analysis

Particle contamination levels provide easy analysis of a machine's condition. With hydraulics and high-speed rotational machinery, particle contamination leads to machine failure, downtime, and maintenance costs. Detecting failure mechanisms such as early detection of oil contaminants allows maintenance personnel to increase machine life and reliability. Hach Ultra's cost-effective HIAC PM4000-xx, which consists of the PT4000-x Particle Transducer and the IM4000-x Computer/PLC Interface, monitors particle contamination levels to alert personnel to small problems that could become bigger ones.

Constructed for harsh environments, the HIAC PM4000 excels in high pressure and high temperature applications and offers carefree maintenance. The large flow path minimizes blockages during operation; the lack of moving parts makes maintenance trouble-free. The PM4000 on-line particle monitor serves a wide range of industrial and mobile applications: multipoint system monitoring as well as point-of-use applications including hydraulic presses and machines, filter carts, fluid fill stations, hydraulic power units, reclamation stations, and component test stands.

Simple, trouble-free, and affordable: the HIAC Model PM4000 allows you to spend more time preventing problems and less time fixing them.

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EXCELLENCE IN PROCESS ANALYTICS

Performance Specifications

Sizes	4, 6, 14, and 21 μm (ISO MTD)
Light Source	Laser diode
Performance Verification	Optional validation certificate available (ISO MTD at 2.8 mg/L concentration)
Reproducibility	0.5 ISO code (minimum concentration ISO MTD 2.8 mg/L, maximum ISO code = 24)
Display	Optional local display presents ISO codes, HIAC codes and alarms
Power	9 to 36 VDC, 150 mA (power must be supplied to instrument for operation)
Output	RS-232, RS-485, 0 to 5 volts, Modbus, alarms, local and remote displays
Reports	ISO 4406 and codes for 4, 6, 14, 21 μm (ISO MTD), particles/mL
Fitting Connections	SAE -4 and -8
Sensor Flow Rate	50 to 500 mL/min (0.01 to 0.1 gal/min) through view area; All units except the PT4000-3 offer integrated flow rate controllers
Fluid Compatibility	Hydraulic and lubrication oils, mineral, synthetic (Phosphate Ester option)
Viscosity	2 cSt (32 SUS) to 424 cSt (viscosities tested at ambient temperature: 25°C +/- 2 degrees)
Environment	Operating Temperature -10 to 60°C (-14 to 140°F) Storage Temperature -40 to 85°C (-40 to 185°F) 97% relative humidity, non-condensing
IP Rating	67
Accessories Included	DDE Software, 6.1 m (20 ft) Fiber Optic Cable, Operator's Manual (with PM4000-xx only, not included with PT4000-x)

Model PT4000-x Particle Transducer

Internal Flow Control Inhibitor

- 1 High pressure 27.6 to 482.5 bar (400 to 7,000 psi)
- 4 High pressure 27.6 to 482.5 bar (400 to 7,000 psi) with local display
- 7 Moderate pressure 3.4 to 82.7 bar (100 to 1200 psi)
- 8 Moderate pressure 3.4 to 82.7 bar (100 to 1200 psi) with local display
- 9 Low pressure 1.4 to 6.9 bar (20 to 200 psi)
- 0 Low pressure 1.4 to 6.9 bar (20 to 200 psi) with local display

Internal Check Flow Control

- 2 3.8 to 37.9 L/min (1 to 10 gal/min), 1.4 to 482.5 bar (20 to 7000 psi)
- 5 3.8 to 37.9 L/min (1 to 10 gal/min), 1.4 to 482.5 bar (20 to 7000 psi)
with local display

No Integrated Flow Control

- 3 50 to 500 mL/min (0.01 to 0.1 gal/min), 1.4 to 482.5 bar (20 to 7,000 psi)
- 6 50 to 500 mL/min (0.01 to 0.1 gal/min), 1.4 to 482.5 bar (20 to 7,000 psi)
with local display

Model IM4000-x Computer/PLC Interface

- 1 RS-232 dongle
- 3 Modbus, RS-232/RS-485, 0 to 5 volt
- 4 Remote LED display with programmable contamination alarm levels, dry contact closure (triggers on alarm)
- 5 Remote LED display with programmable cleanliness alarm levels, dry contact closure (triggers on alarm)

Optional Accessories

- Phosphate Ester Compatibility
- Minimess Sampling Port SAE -4
- Minimess Microbore Sampling Hose



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