TORONTECH

PARTICLE COUNTER SENSOR

Particle Counter Sensor ToronOPC™-50/50 delivers precise liquid particle sizing using optical light-blocking technology for portable, inline, and lab contamination monitoring.

APPLICATIONS

Particle Counter Sensor - ToronOPC™ 50/50

Particle Counter Sensor – ToronOPC™-50/50 is a precision analytical sensor designed for use in advanced Portable Particle Counter and Oil Particle Counter systems to detect and quantify solid particles suspended in liquids. Built on proven optical light-blocking technology, this sensor delivers highly accurate particle sizing and counting across a broad range of fluid cleanliness applications. Its compact, rugged design enables seamless integration into inline, portable, or laboratory-based contamination monitoring solutions to support condition-based maintenance and quality control.

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ToronOPC-50/50 - Precise Particle Counter Sensor

Applications

The Particle Counter Sensor – ToronOPC™-50/50 sensor is suitable for a wide range of particle detection and fluid cleanliness measurement tasks, including:

- Hydraulic Oil Monitoring – Detects wear and contamination particles in hydraulic systems for predictive maintenance.
- Lubricating Oil Analysis – Measures particulate levels in industrial and mechanical lubricants to assess fluid health.
- Transformer Insulating Oil Testing – Tracks particle contamination in dielectric oils for power generation and transmission equipment.
- Gear & Engine Oil Inspection – Provides particle size distribution in gear and engine oils to help extend service life and reduce breakdowns.
- Aviation Fuel Quality – Supports clean fluid verification in kerosene and aviation-grade fuels.
- Industrial Fluid Condition Monitoring – Integrates into inline systems for real-time contamination tracking in manufacturing processes.

Standards

The Particle Counter Sensor – ToronOPC™-50/50 sensor supports calibration and reporting compatible with major international cleanliness and fluid contamination standards, including:

- ISO 4402 / ISO 11171 – Fluid particle counting and calibration protocols.
- ISO 4406 (1999/2007/1987) – International fluid cleanliness codes.
- NAS 1638 – Aerospace fluid contamination classification.
- SAE AS4059 – Aerospace and automotive fluid cleanliness standards.
- ROCT 17216 – Russian particle ontamination classification.

FEATURES

Particle Counter Sensor - ToronOPC™ 50/50 Key Features

- Advanced Optical Light-Blocking Detection
  - Uses the light-blocking principle to accurately detect and size particles in a wide range of industrial liquids.
- High-Sensitivity Particle Sensing
  - Designed with high-precision optical components to deliver stable measurement performance and high resolution in contamination detection.
- Multi-Channel Particle Size Resolution
  - Supports multiple particle size channels with fine resolution, enabling detailed particle size distribution profiling.
- Wide Application Compatibility
  - Works with a variety of particle counter systems, including portable, online, and laboratory units, for fluid condition monitoring and cleanliness analysis.
- Robust, Compact Design
  - Built for long-term service in portable instruments or fixed installations with reliable optical performance and environmental tolerance.
- Calibration Standard Support
  - Compatible with calibration protocols such as ISO 4402 and ISO 11171 to ensure traceable accuracy.

TECHNICAL SPECIFICATIONS

Particle Counter Sensor - ToronOPC™ 50/50 Technical Specifications

Model	ToronOPC™-50/50
Detection Principle	Optical light-blocking method
Particle Size Range	Typically 1 µm – 500 µm (dependent on system configuration)

Resolution	Fine channel interval (e.g., 0.1 µm)
Sensitivity Threshold	As low as 1 µm (ISO 4402)
Measurement Stability	High resolution and repeatability
Compatibility	Portable and online particle counter systems
Calibration Standards	ISO 4402, ISO 11171 support
Operating Environments	High-precision laboratory or field systems
Integration	Designed for optical particle counter modules

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