



TORONTECH



LIQUID AND OIL PARTICLE COUNTER

Liquid and Oil Particle Counter

Liquid and Oil Particle Counter measures the size and quantity of solid particles suspended in fluids such as hydraulic oil, lubricating oil, transformer insulating oil, turbine oil, fuel, and other industrial liquids. These particles are a primary cause of wear, system failure, and reduced equipment life.

ToronOPC™ particle counters use a laser-based light-blocking method: as particles pass through a sensing zone, they interrupt a light beam, allowing the instrument to calculate particle size and concentration. The result is a clear, quantitative assessment of fluid cleanliness, enabling informed maintenance decisions, reduced downtime, and extended equipment service life.

ToronOPC™ is a comprehensive family of Liquid and Oil Particle Counter solutions engineered for accurate detection, classification, and monitoring of solid particle contamination in oils and industrial fluids. Covering portable, laboratory, online, and sensor-based configurations, the ToronOPC™ series supports both routine maintenance and advanced condition monitoring across critical industries.

Built on proven optical light-blocking (optical occlusion) technology, ToronOPC™ systems deliver reliable particle size distribution and cleanliness classification aligned with global standards such as ISO 4406, NAS 1638, and SAE AS4059. From handheld field inspections to continuous online monitoring, ToronOPC™ provides scalable contamination control solutions for modern reliability programs.

APPLICATIONS

Applications of ToronOPC™ series

The ToronOPC™ Liquid and Oil Particle Counter series is widely used across industries where fluid cleanliness directly impacts performance, safety, and reliability:

- Military & Defense
 - Monitors hydraulic fluids, lubricants, and fuels in military vehicles and equipment to ensure mission readiness, reduce component wear, and support predictive maintenance.
- Aerospace & Aviation
 - Supports contamination control of aviation hydraulic oils, turbine lubricants, and fuel systems, helping protect flight-critical components and meet stringent cleanliness requirements.
- Power Generation & Electrical Utilities
 - Analyzes transformer insulating oils and turbine lubricants to detect wear debris, maintain dielectric performance, and prevent unexpected failures.
- Transportation & Heavy Equipment
 - Enables condition monitoring of lubricants and hydraulic fluids in rail, marine, mining, construction, and heavy-duty vehicle systems to optimize maintenance intervals.
- Industrial Manufacturing
 - Provides real-time and laboratory-based fluid cleanliness data for hydraulic presses, injection molding machines, and automated production lines.
- Oil, Chemical & Process Industries
 - Measures insoluble particles in fuels, organic liquids, polymer solutions, and specialty fluids to maintain process stability and product quality.

FEATURES

Why Choose ToronOPC™ Series?

Choosing ToronOPC™ means investing in accuracy, flexibility, and long-term reliability:

- Complete Product Range
 - From portable particle counters and online systems to laboratory analyzers and modular sensors, ToronOPC covers every contamination monitoring scenario.
- International Standards Compliance
 - Supports ISO, NAS, SAE, and military cleanliness standards, enabling global reporting consistency and regulatory confidence.
- High Measurement Accuracy
 - Advanced laser optics, high-resolution sensors, and stable sampling systems deliver repeatable, trustworthy particle count data.
- Field to Lab Flexibility
 - Battery-powered portable units, rugged online monitors, and high-capacity laboratory instruments adapt seamlessly to different operating environments.
- Advanced Data Management
 - Integrated software, industrial Windows platforms, onboard storage, USB export, and optional printers ensure full traceability and audit readiness.
- Built for Harsh Environments
 - Industrial-grade construction, high-pressure tolerance, and strong anti-interference design support long-term operation in demanding conditions.
- Future-Ready Monitoring
 - Optional moisture, viscosity, temperature sensing, and customizable calibration curves enable comprehensive fluid condition analysis beyond particle counting alone.

ToronOPC™ Liquid and Oil Particle Counter solutions deliver the clarity, confidence, and control needed to protect critical equipment, reduce operational risk, and extend asset life—whether in the field, the lab, or continuous online operation.



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