

TOA™ with Monitor Watch™

You invested in DGA monitors. Make the data count.

All your DGA data in one place — any monitor, any lab

Transformer Oil Analyst™ (TOA) with Monitor Watch™ works with any dissolved-gas analysis (DGA) monitor.



Mix and match devices across your fleet, keep your preferred labs.



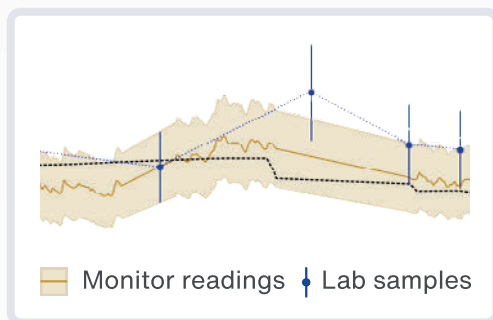
Get a consistent interpretation across every DGA data source.



Manage all your DGA data and analytics from a single location.

Easily compare lab and monitor data

See lab and monitor results side-by-side. Monitor Watch transforms raw monitor data for direct comparison with lab results — in a single view.



Delta-X
RESEARCH

Scientific
Easy
Independent



There are no industry guidelines for interpreting DGA monitor data

The IEEE acknowledges its interpretation criteria "no longer apply" to continuous monitoring,¹ and many utilities report excessive false alarms generated from their DGA monitors.

Yet most monitor analytics continue to rely on conventional standards, perpetuating the problem for utilities.

Interpret monitor data with scientifically validated methods

Rather than relying on guidelines that don't apply, TOA with Monitor Watch uses signal processing to discern the relevant information, then applies **Reliability-based DGA** — a novel interpretation method proven to **outperform other methods at flagging at-risk transformers**.² It then automatically ranks your transformers by likelihood of failure. Conventional methods from the IEEE and IEC don't do this. With correct understanding of likelihood of failure, **you can prioritize your transformers for further maintenance or replacement.**

¹ C57.104-2019 IEEE Guide for the Interpretation of Gases Generated in Mineral Oil-Immersed Transformers, pg. 30.

² Z. H. Draper and J. J. Dukarm. Forecasting near-term failure of transformers using reliability statistics on dissolved gas analysis. In 2021 CIGRE Canada Conference, number 408, Toronto, ON, October in press.

Transformer problem or DGA monitor problem?

Cut through DGA monitor data-quality problems

Start with cleaner data

Monitor data passing through aggregators and historians often arrives with irregular intervals and gaps, **making gassing look erratic when it may just be integration or communications issues.**

Monitor Watch **addresses these upstream irregularities before analysis begins**, so they don't compromise your interpretation later.

Detect hidden outages

When DGA monitors fail, many systems keep reporting stale or erratic data, giving you no reason to suspect anything is wrong — unless you know to look — all while **faults could be developing undetected.**

Monitor Watch **automatically alerts you to hidden outages**, so gaps in your monitor health don't become gaps in your fault detection.



Recognize seasonality

Seasonal temperature changes cause gases to migrate back and forth between the paper insulation and the oil, often triggering **false alarms.**

Monitor Watch **filters out seasonal data distortions**, improving data quality and DGA interpretation accuracy.

Reduce false alarms

Volatile monitor measurements can trigger **alerts that have little to do with real gassing events.**

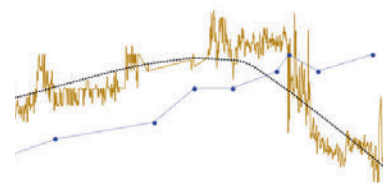
Monitor Watch **uses signal processing to isolate the signal that matters** for your transformer DGA health assessment.

Build trust in your DGA monitors with Noise Index

Know what to trust — and what to question. Monitor Watch's **Noise Index** adds a critical validation layer that most analytics skip entirely: it evaluates the quality of your continuous online DGA data and scores it for measurement uncertainty.

This additional layer of insight helps you:

- ✓ Determine whether to investigate the transformer or the monitoring system.
- ✓ Detect early signs of monitor sensor deterioration or communications failures.
- ✓ Plan and allocate maintenance resources for transformers and monitors more efficiently.



— Monitor readings
---- Signal processing
• Lab samples

Noise Index = 4

