# CONFIRM OIL INTEGRITY AND PREVENT CATASTROPHIC FAILURE

The Measure of Confidence

## Agilent Transformer Oil Gas Analyzer (TOGA)

The performance and longevity of electrical transformers depend upon the stability of the oil used as an insulator and coolant. Normal transformer operation subjects the oil to electrical and mechanical stresses, causing aging, oxidation, vaporization, electrolytic action, and decomposition. These can change the oil's chemical properties and result in gas formation.

Analyzing these dissolved gases provides crucial diagnostic information about the transformer's current and future stability – and helps you determine whether a transformer should be decommissioned.

### Reliably characterize oil composition and integrity immediately after installation

Based on Agilent 7890B GC system, **Agilent Transformer Oil Gas Analyzers** are factory-configured and chemically tested to help you detect individual gas components – and measure their ratios – to predict and prevent transformer failure.


### Agilent Transformer Oil Gas Analyzers include innovative technology and reflect our stringent quality control process. Systems include:

**Factory**

- System setup and leak testing
- Instrument checkout
- Installation of appropriate columns
- Factory-run checkout method using application checkout mix

**Delivery**

- Instrument manual for running the method
- CD-ROM with method parameters and checkout data files for easy out-of-the-box operation
- Application related consumables included – no separate ordering required
- Easy consumables re-ordering information

**Installation**

- Duplicate factory checkout with checkout sample – onsite by factory-trained support engineer
- Optional application startup assistance

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## Perform fast, unattended analysis of transformer oil gas using these built-in features:

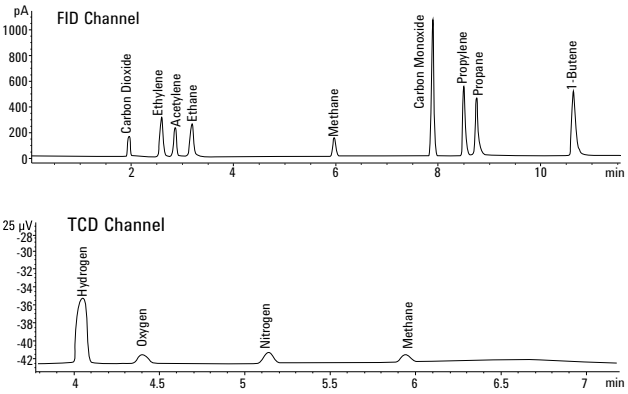
- **A robust method** for measuring decomposition products, including $H_2$, $O_2$, CO, $CO_2$, and $C_1$-$C_3$.
- **Compliance with ASTM D3612** – including customizable data output reports.
- **Rigorous, highly efficient packing technology,** used in Agilent J&W Packed GC columns, ensures column-to-column reproducibility and separation efficiency.
- **Unattended operation:** Analyzers are configured around the Agilent 7890B GC, and interfaced to the Model 7697A Headspace Sampler.

## Ordering information:

| Part Number | Configured per | Target Analytes |
|---|---|---|
| G3445 Series #571 | ASTM D3612-C | $H_2$, $O_2$, $N_2$, CO, $CO_2$, $CH_4$, $C_2$ (ethane, ethylene, acetylene), $C_3$ (propane, propylene), and $C_4$ (1-butene) |
| 7890-0047 | ASTM D3612-A | $H_2$, $O_2$, $N_2$, CO, $CO_2$, $CH_4$, $C_2$ (ethane, ethylene, acetylene), $C_3$ (propane, propylene), and $C_4$ (1-butene) |
| 7890-0552* | ASTM D3612-C | $H_2$, $O_2$, $N_2$, CO, $CO_2$, $CH_4$, $C_2$ (ethane, ethylene, acetylene), $C_3$ (propane, propylene), and $C_4$ (1-butene) |

*With methanizer bypass to improve low end performance.

## Ensure operational stability and generate reproducible data... day in and day out




**Configuration:**
- 1-valve/2-column/TCD/FID/ Methanizer/Headspace

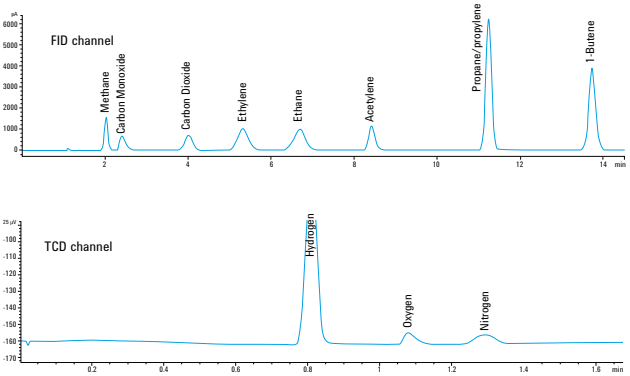
**Sample type:**
- Gas

**Compounds analyzed:**
- $H_2$, $O_2$, $N_2$, $CH_4$, CO, $CO_2$
- $C_2$ (ethane, ethylene, acetylene), $C_3$ (propane, propylene), $C_4$ (1-butene)

**Typical quantification range:**
- Meet the specifications for ASTM D3612-C

**Configured per method:**
- ASTM D3612-C

**This transformer gas analysis was completed in just 10 minutes**. Trace levels of CO and $CO_2$ were analyzed by conversion to $CH_4$, followed by FID detection.




**Configuration:**
- 2-valve/2-column/TCD/FID/ Methanizer

**Sample type:**
- Gas

**Compounds analyzed:**
- $H_2$, $O_2$, $N_2$, $CH_4$, CO, $CO_2$
- $C_2$ (ethane, ethylene, acetylene), $C_3$ (propane, propylene), $C_4$ (1-butene)

**Typical quantification range:**
- Meets requirements for ASTM D3612-A

**Configured per method:**
- ASTM D3612-A

**It took just 15 minutes** to complete this transformer gas analysis per ASTM D3612-A. The analyzer was also configured with data reporting macros per the ASTM method. (Microsoft® Excel required.)

## Put your applications on the *fast track*

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Or call **800-227-9770** (in the U.S. or Canada)

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