GE
Grid Solutions

Intellix GLA 100

Cost Effective Transformer Warning Solution

Product overview

Transformers are key and expensive components of the electrical grid and knowledge of their health condition is essential to having a reliable network. When a transformer's insulation system is overstressed, gases are produced that dissolve into the insulating oil. Dissolved Gas-in-oil Analysis (DGA) is recognized as the best indicator of developing faults.

Critical Generation and Transmission transformers are typically equipped with fully featured multi-gas monitoring systems capable of providing real-time diagnostics. As the criticality decreases, so does the number of fault gases analyzed and the number of actual transformers monitored.

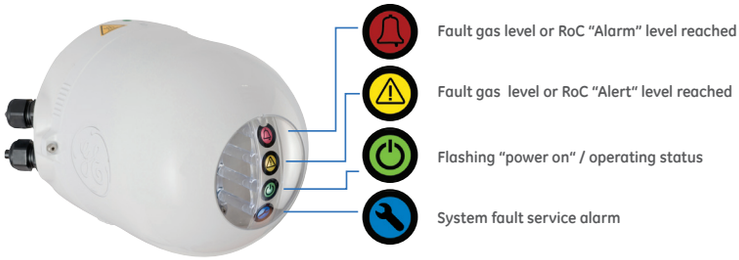
The Intellix™ GLA 100 is a small and intuitive transformer "gas level alarm" that uses the same proven technology used in other more expensive DGA monitors. It provides a cost-effective transformer warning solution, specifically tailored for monitoring less critical and less expensive transformers that would otherwise typically be left unmonitored.

Key Benefits

- Proven technology at entry-level price point
- Continually measures transformer fault gas level and rate of change
- Easy to install, configure and use
- Integrated manual sampling port

Applications

The Intellix GLA 100 is ideal for smaller transformers, when the aim is less about protecting the asset and more about dispensing with regular site visits to perform routine manual DGA sampling, getting prior warning that the transformer's health is failing so replacement can be scheduled, avoiding costly overtime and week-end work to replace transformer urgently upon failure and mitigating the inconvenience with commercial/industrial customers.



imagination at work

Fault Gas Alarm

- Gas sensor responds 100% to Hydrogen (general fault gas) and also sensitive to Carbon Monoxide (overheated paper)
- Small form factor. Easily mounted on a 1 inch valve exposed to the transformer oil. No extra piping or pump required. Weighing only 3.5 Kg

Configurable Alarms

- Alarm raised when an abnormal level of fault gas is reached or when the rate of change (RoC) of this gas level increases rapidly
- Two triggers are available showing increasing severity: Alert level and then Alarm level
- The Intellix GLA 100 comes pre-set with default alarm settings for simplicity but these are also user configurable using DIP switches

Straightforward Alerts

- Uncomplicated and easy to understand
- 4 front, sunlight visible, light indicators
- 3 dry contact relays available to communicate alerts to a control centre

Gas Value Visualization

- Optional Android® App for smartphones or tablets
- Enables to read the gas ppm and gas RoC values when standing in front of the unit

Low Maintenance

- Simple and reliable. No moving parts
- Vacuum-resistant membrane
- No consumables or field calibration required
- No PC needed to install / configure
- Regular automatic self-test with service alarm

GLA 100 Reader App

The Intellix GLA 100 has been cleverly designed to interface through an App with an Android based tablet or smartphone. It allows the user to acquire and read both the gas level ppm reading and the gas level rate of change per 24h (RoC).

Not only is the App able to read the values but it can also store them to maintain a history of the gas and RoC levels of each asset. A basic trending graph can also be plotted.

Being able to check the gas level reading during installation or simply to record it periodically during inspection rounds is very useful and this App enables the user to gain the benefit of a display without adding any unnecessary cost to the Intellix GLA 100.

The App works with a majority of Android based devices provided they are running Android OS 4.0 or greater and have a camera with minimum resolution of 320x200 pixels and 20 fps.

Technical Specifications

MEASUREMENTS

Fuel cell type sensor behind a gas permeable membrane in contact with transformer insulating oil

Range	25-5,000 ppm (volume/volume, H_2 equivalent)
Accuracy	Gas: ±20% or ±25 ppm (whichever is greater)
Response time	Less than 30 minutes[1] (80% of step change)
Relative sensitivity	H2: 100% of H2 concentration CO: ~15% of CO level[2]

OUTPUTS

Light Indicators

4 sunlight visible indicators:
Red – Alarm
Amber – Alert
Green Flashing – Power
Blue – Service

Alarm Contact

Two dry contact alarm relays (Type C, SPDT) for gas status (Alert & Alarm)

One dry contact alarm relay (Type C, SPDT) dedicated to system faults

All relays: 1 A @ 250 VAC resistive load, 0.1 A @ 250 VDC resistive load or 0.5 A @ 48 VDC

ENVIRONMENT

Conditions

Operating ambient temperature	-40°C to +55°C (-40°F to +131°F)
Operating ambient humidity	0-95% RH, non-condensing
Oil temperature at valve	-20°C to +105°C3 (-4°F to +221°F with finned heat sink adapter option fitted)
Oil pressure at valve	0-700KPa (0-100psi) Vacuum resistant sensor

Power Supply Requirements

100-120VAC or 200-240 Vac ±10% switch mode PS, 47-63 Hz, 2.3/4.5A max

Enclosure Rating

Certified to IP67 and to NEMA 6
(no ingress of dust, temporary immersion in water)

Mechanical

Has a 1" NPT male thread

Dimensions	17.1 x 18.9 x 25.8 cm (6.7 x 7.4 x 10.1 in) height, width, depth
Installed weight	3.5 kg (7.7 lb)

FEATURES

Manual Sampling

External sampling port available for glass syringe, with Luer stop cock

OPTIONS

Adapters for 2" and 1.5" NPT valves

Adapters for non NPT valves

Finned heat sink adapter (1.5") for when ambient temperature is greater than 40°C (104°F) or when oil temperature at valve is higher than 90°C (194°F)

Android based tablet or smartphone to use the GLA 100 reader App

[1] In gas phase, at 35°C

[2] No cross interference with other gases at levels up to 5 times IEEE® C57.104-2008 Condition 4

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