PITE

TransPRO® KGX1 Series

Enhanced Transformer On-Line Dissolved Gas & Moisture Monitor

Dissolved Gases are Indicative of Developing Faults in Electrical Apparatus
Dissolved Gas Monitoring is An Essential Part of Preventive Programs

Applications

Electric utilities are constantly seeking a reliable, maintenance free and cost-effective on-line fault gas monitor for their most valuable equipments. In the meantime they have to live with numbers of transformers which were not designed with a proper valve and location for this purpose. Such valve often: 1). has small ID (<1.5); 2). is non straight-thru type; 3). has excessively long or elbow oil pipe; 4). is located in a restricted space not big enough to install classic monitor; and 5). presents excessively strong vibration. Past experience has shown that the classic monitor installed directly on such valve often fails to alarm the fault on time, thus misses the opportunity to warn the personnel for remedial actions.

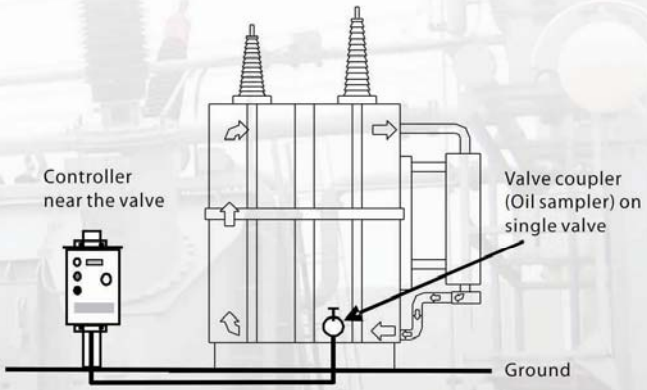
TransPRO® KGX1 enhanced on-line fault gas and moisture monitor is the right solution for this! This specially designed model employs the same robust KG2100 fuel cell gas sensor which is the first of its kind in the world to be able to withstand absolute vacuum.

Besides those in-service power transformers, it can also be applied to current / potential transformer, bushing and pole-mounted transformers. What's more, the KGX1 platform can easily integrate other on-line monitoring devices such as moisture sensor for oil.

Key Components

Each unit is comprised of two key components:

1. **Valve coupler (Oil sampler)** has inlet and outlet ports together with cut-off valves, and is installed typically on a single draining valve at the bottom of transformer.
2. **Controller** contains a gas sensor, an intelligent transmitter, a micro pump and power supply. It is installed typically in the proximity of the valve, such as wall, pole or mechanical support.



Technology

Fuel cell dissolved gas sensor integrates with our multiple patents related to **vacuum-resistant composite oil/gas separation membrane**, **efficient fuel cell gas diffusive electrode**, and **sensor self-test and diagnosis**.

KGX1 Series has 4 models to choose, as shown in back page. More information can be found at our website.

"Your Concern Is Ours"

TransPRO® KGX1 Series

Enhanced Transformer On-Line Fault Gas & Moisture Monitor

General

Description of Instrument	Continuous, on-line intelligent dissolved gas & moisture monitor with enhanced oil re-circulation
Instrument Components	KG2100 gas sensor and an intelligent transmitter in a stainless steel enclosure, a recirculating oil sampler with a micro pump and a Windows based Host software. A moisture sensor/transmitter for oil is also integrated in selected models.
Applications	Detection of failure conditions in oil-filled HV electrical equipment through monitoring of fault-related key gases and moisture in insulating oil.

Sensor Analytical Specifications

Model		KGX1A	KGX1AW	KGX1B	KGX1BW
Reading	composite value of H_2/CO/C_2H_2/C_2H_4	•	•		
	selective H_2			•	•
	moisture in oil (RH%)		•		•
Accuracy	H_2±10% reading or ±20μL/L, whichever is greater	•	•	•	•
	RH%: ±2RH%		•		•
Range	H_2: 0~2000μL/L	•	•	•	•
	RH%: 0~100RH%		•		•
Response time	⩽10min to 80% of step change	•	•	•	•
Relative sensitivity	to H_2 100% to CO 10~20% to C_2H_2 10~20% to C_2H_4 2~8% (see sensor calibration sheet)	•	•		
	to H_2 100% to others <1%			•	•
Oil pressure at the sensor from 0.7MPa to absolute vacuum allowed		•	•	•	•

Oil Sampler

Sampling head	Directly fitted to a single transformer valve to force oil re-circulation.
Purge port	Allow to remove air, as well as sample oil by glass syringe fitted with Luer stopcock for laboratory DGA.
Micro oil pump	PTFE material as wetted part, driven by state-of-the-art brushless DC motor.
Pipe	Use copper or PTFE pipe to link oil sampler and controller, standard one-way pipe length is 4m. A self-regulating heat cable is attached to the pipe.

Controller

Hardware and firmware	Microprocessor, watchdog and real-time clock with embedded firmware
Comm./Network	Standard RS-485 port allows for daisy-chaining of multiple transmitters RS485/232 or RS485/TCP-IP, selectable when ordering
Front panel	Alarm indicator: Normal, Gas Hi and Gas Hi-Hi. Gas Reading: LED Display
Alarm relays	Normal, Gas Hi and Gas Hi-Hi, synchronized to front panel indicator
Power supply	220VAC/50Hz±15%, 500VA Max. 120VAC/60Hz also available
Dim. & Weight	Stainless steel enclosure, W381mm×H610mm×D246mm, ≤20kgs
Host PC software	Support networking, Windows 2003/2008/XP/Win 7

Environmental Test

Outdoor protection	IEC60529, IP55
Vibration	IEC68-2-6
High & Low temp	IEC68-2-1 /IEC68-2-2, 60°C & –40°C
EMC	IEC61000-4-2/4/5/8, Grade 4
Other	CE Mark, RoHS

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