Detect & Monitor
Key Fault Gases & Moisture
dissolved in dielectric liquid

Dissolved Gases Are Indicative Of Developing Faults In Electrical Apparatus
Dissolved Gas Monitoring Is An Essential Part of Preventive Programs

➔ Applications

TransPRO® KGX3 Series enhanced transformer on-line dissolved gas monitor is used for continuous monitoring of dissolved H_2, C_2H_2, CO and moisture in oil individually and in real-time. With proven technology, no spare parts and maintenance-free features, this product is designed for on-line incipient fault detection for oil-filled HV equipments in cost-effective way.

➔ Features

1. Multi-gas monitoring

Incorporating Incorporating our core technology, the monitor encompasses multiple selective gas sensors that enable continuous monitoring of H_2 (incipient fault gas), C_2H_2 (dangerous fault gas), CO (indicator of aging solid insulation) and moisture individually and simultaneously. Typical installation refer to Figure 1.
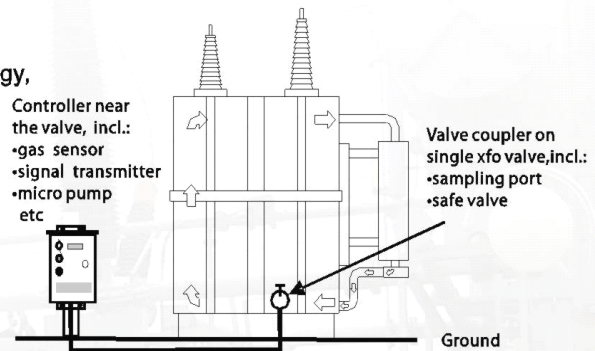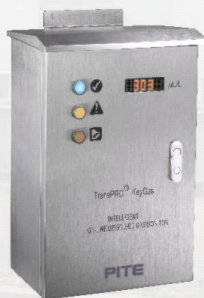
Controller near the valve, incl.:
•gas sensor
•signal transmitter
•micro pump
etc

Valve coupler on single xfo valve,incl.:
•sampling port
•safe valve

Ground

Figure 1.

2. Easy & Flexible installation

The monitor includes valve coupler and controller. It can be installed basically on valves of any type while preventing dead oil resulting from non straight-thru, small ID or excessively long pipe and restricted mounting space or strong vibration at valve location.

➔ Technology

Integrating 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**, the fuel cell based KG3100H dissolved gas sensor is the first of its kind in the world.

KGX3 series has 2 models avaliable, as shown in back page. More information can be found at our website.

TransPRO® KGX3 Series
Enhanced Transformer On-Line Dissolved Gas & Moisture Monitor

General

Description of instrument	Continuous, on-line intelligent dissolved gas monitor with enhanced oil rec-irculation
Instrument components	KG3100H 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 is also integrated in KGX3W model.
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		KGX3	KGX3W
Reading	Selective reading of H_2/CO/C_2H_2	●	●
	Moisture in oil (RH%)		●
Accuracy	$H_2 \pm 10\%$ reading or $\pm 20\mu L/L$ $CO \pm 10\%$ reading or $\pm 20\mu L/L$ $C_2H_2 \pm 10\%$ reading or $\pm 3\mu L/L$	●	●
	RH%: ±2RH%		●
Range	H_2: 0~1000μL/L, CO: 0~2000μL/L, C_2H_2: 0~200μL/L	●	●
	0~100RH% and 0~100μg/g absolute water content		●
Limit of detection	H_2: 10μL/L, CO: 20μL/L, C_2H_2: 3μL/L (99% confidence)	●	●
	RH%: ±2RH%		●
Response time in oil	≤60min to 80% of step change	●	●
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 DÇ 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 rotating display.
Alarm relays	Normal, Gas Hi and Gas Hi-Hi, synchronized to front panel indicator.
Power supply	220VAC/50Hz ± 15%, 500 VA Max. 120VAC/60Hz also available
Dim.& Weight	Stainless steel enclosure, W 381mm×H 610mm×D 246 mm, ≤20 kgs
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