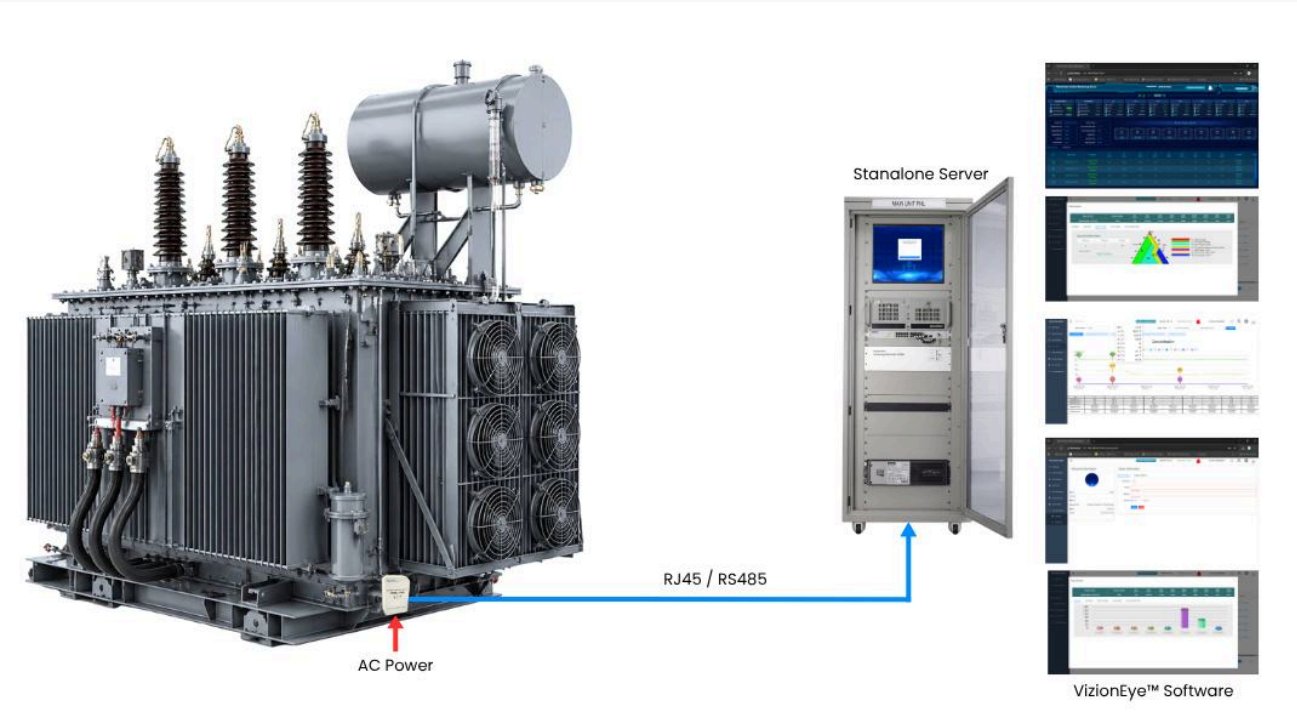
PTDGA-1003 iDGA Online Dissolved Gas and Moisture Analysis System

Product Overview

The PTDGA-1003 iDGA is an advanced online dissolved gas monitoring device designed for 24/7 continuous surveillance of oil-immersed main transformers and reactors. Utilizing a narrow-linewidth semiconductor laser combined with patented sub-ultrasonic resonance photoacoustic spectroscopy, the device delivers highly stable, real-time analysis of critical fault-indicative gases. By automating early fault warnings and replacing traditional manual offline oil chromatography, the PTDGA-1003 significantly reduces Operation & Maintenance labor costs and eliminates the safety risks associated with manual sampling.

System Architecture



Applications

Substations

Industrial

Oil & Gases

Key Capabilities

Targeted Gas Monitoring: Continuously measures real-time concentrations of Hydrogen (H_2), Carbon Monoxide (CO), Acetylene (C_2H_2), and dissolved moisture (H_2O).

Automated Diagnostics: Built-in algorithms instantly identify insulation defects, including incipient low-temperature overheating, high-temperature overheating, partial discharge, and arcing short circuits.

Next-Generation Reliability: Operates entirely without chromatographic columns or moving mechanical parts, ensuring superior long-term stability and substantially lower maintenance requirements than traditional gas chromatography equipment.

Seamless Integration: Supports secure local data storage alongside multi-channel remote transmission directly to substation control systems for round-the-clock asset health tracking.

Operation Advantages

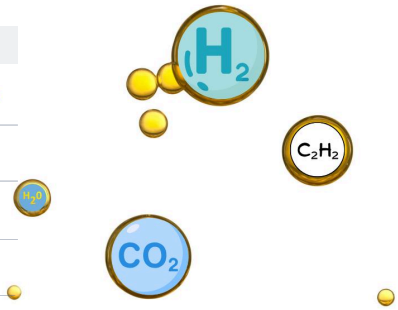
Cost Reduction: Drastically lowers O&M overhead by replacing labor-intensive manual testing.

Risk Mitigation: Removes field technicians from hazardous manual oil sampling environments.

Proactive Protection: Extends the lifespan of critical power equipment through immediate detection of developing insulation faults.

Measurement Performance

Parameter	Detection Range (μL/L)	Permissible Measurement Error
Hydrogen (H_2)	5 – 2,000	±3μL/L or ±10% (greater value applies)
Acetylene (C_2H_2)	0.5 – 200	±0.5μL/L or ±10% (greater value applies)
Carbon Dioxide (CO_2H_2)	25 – 3000	±25μL/L or ±10% (greater value applies)
Water (H_2O)	0 – 100	±3μL/L or ±10% (greater value applies)



Specifications

Power Supply	220 V AC ±10%, 50 / 60 Hz
Working Environment	-40~55℃, ≤95% RH
Weigth	‹10kg
Dimension	260mm(H)*260mm (W)*300mm(D)
Measurement cycle	Minimum 10 minutes, maximum 24 hours.
Control method	Automatic, Menu Settings, Manual Control
Communication method	RJ45, RS485, Fiber Optic

Communication Protocol	TCP/IP, Modbus, IEC61850
Altitude	≤5000m
Overvoltage Class	IV
Ingress Protection	IP55
Insulation Rating Of The External Circuit	≥100MΩ
Compliance	IEC 60599, IEEE Std C57.104, DL/T 722