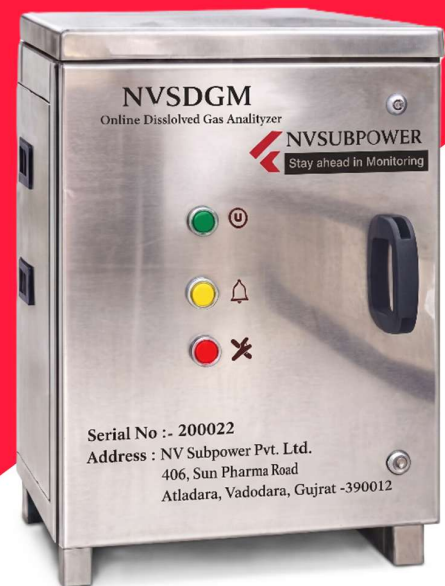


NVSDGM

Online Dissolved Gas Monitoring System



Your Trustworthy Partner for
Electrical Diagnostic System

1. System Overview and Technical Specification

The dissolved gas monitoring device measures gas concentrations and moisture (H₂O) in oil-immersed transformers and provides real-time condition monitoring for early fault detection.

➤ BENEFITS

▪ PAS (Photo Acoustic Spectroscopy)

- Extended equipment lifecycle
- Easy & affordable maintenance
- No need for carrier gas
- Minimized spare parts
- Simple design with high accuracy and reduced failure rate
- Stabilized with wide measuring range

PAS (Photo Acoustic Spectroscopy) : A cutting-edge method that detects gases based on acoustic signals generated by absorbed light energy.

▪ Configurable Specifications

- Select up to 7 gases (+2 optional gases)
- Gas selection considering transformer capacity,
- Faults to be detected and types of insulation oil
- Transformer capacity: 1 gas type, 3~7 gases type, multi-tank type
- Fault gases detected: H₂ / C₂H₂ / C_nH_m type, etc.
- Insulation oil(vegetable oil, non-flammable oil): H₂ / C₂H₆ type, etc.

▪ Intelligent Dissolved Gas Monitoring System

- Local software enables data acquisition and fault analysis
- Operation settings, graphics and data management
- Configurable diagnostic criteria

▪ Total Dissolved Gas Monitoring System

- Online DGA allows monitoring and remote control in real-time
- Compatible with online electrical asset monitoring systems

➤ NVSDGM 3,4,5,7 and 9 Gases

▪ FEATURES

- Measuring gases: H_2 , CH_4 , C_2H_6 , C_2H_4 , C_2H_2 , CO , CO_2 (H_2O) – Optional O_2 , N_2
- Measuring method: PAS, Semiconductor sensor
- Optional 7-inch LCD display: operational data, test & diagnosis result
- LED indicators: Power / Device Error / Gas Alarm
- Settings: Operating time, measurement cycle, and diagnostic criteria
- Minimum measuring cycle: 1 hour
- Diagnosis of transformer fault based on gas concentration & trend

NVSDGM 3T

▪ FEATURES

- Integrated 3-tank design for compact installation
- Ensures contamination-free gas measurement
- LCD (7.0" as an optional): operational data, test
- LED : Power / Device Error / Phase A, B, C Gas Alarm
- Measuring cycle: Minimum 3 hr.
- Applicable to 3 phase transformers



➤ **Online DGA Monitoring Software - Optional**

- Remote monitoring in real-time
- Remote control of operational data & settings
- Displays gas concentration trends with status classification (Normal / Abnormal / Warning)
- Evaluates degradation via CO & CO₂
- Creates a report on diagnosis results
- Event alerts based on transformer diagnostics
- Integrated diagnostic methods: IEC, IEEE, and Duval Triangle analysis
- Analyze faults in transformers (PD, thermal degradation, arcing, etc.)

Category	Test
IEC 61000-4-3: 2020	Radiated Electromagnetic Hi Frequency Field Immunity Test
IEC 61000-4-5: 2017	Surge Immunity Test (Table Top Equipment)
IEC 61000-4-2: 2008	Immunity to Electrostatic Discharges
IEC 61000-4-6: 2023	Conducted Disturbance Induced by RF Fields
IEC 61000-4-8: 2009	Power Frequency Magnetic Field Test
IEC 61000-4-4: 2012	Electrical Fast Transient/Burst Immunity Test
IEC 61000-4-5: 2017	Surge Immunity Test (Electrical & Electronics Equipment)
IEC 61000-4-11: 2020	AC Voltage Dips & Interruption Test

TECHNICAL SPECIFICATIONS

	Fault Gas Type	Minimum Measuring Limit (Customizable)	Maximum Measuring Limit (Customizable)
Measuring Gases	H ₂ (Hydrogen)	2 ppm	5000 ppm
	CH ₄ (Methane)	0.5 ppm	5000 ppm
	C ₂ H ₆ (Ethane)	0.5 ppm	5000 ppm
	C ₂ H ₄ (Ethylene)	0.5 ppm	5000 ppm
	C ₂ H ₂ (Acetylene)	0.1 ppm	5000 ppm
	CO (Carbon monoxide)	20 ppm	5000 ppm
	CO ₂ (Carbon dioxide)	20 ppm	75000 ppm
Optional	O ₂ (Oxygen)	200 ppm	50000 ppm
	N ₂ (Nitrogen)	1000 ppm	200000 ppm
	H ₂ O (Moisture)	0~100%(AW) or 0~100 ppm	
Measuring Range	Min.~ Max. (full range calibration) / H ₂ O : 0~100 % (Relative Humidity) (in ppm)		
Measuring Cycle	User selectable - Minimum 1 hour		
Dimensions	700mm x 615mm x 485mm		
Weight	78 Kg		
LED Alert -	Three front End LEDs Alarms Green - Power On, Yellow - Measurement and Red - Maintenance		
Enclosure	SS 304 Enclosure Embedded, SS316 Optional		
LCD Display	Screen with 6 function keys, 7inch LCD optional		
Measuring Method	Photoacoustic Spectroscopy (PAS), Semiconductor Sensor		
Accuracy	Less ±5 % or LDL (Repeatability: ±3%)		
Operating Temperature	- 4 °C to 60 °C		
Oil Temperature	- 40 °C to 100 °C		
Relays	Optional up to 8 relays		
Port	RJ45 Ethernet		
Protocols	Optional - IEC 61850, Modbus TCP, DNP3.0, RS485		
Optional Accessories	Mounting stand		

2. System Dimension Overview:

