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## SE3000 Dissolved Gas Analysis Online Monitoring Device

### 1. Product Overview

The SE3000 online Dissolved Gas Analysis monitoring device for dissolved gases in transformer oil includes three models: basic type, high-precision type, and high reliability type. The device is based on the principle of gas chromatography analysis and uses dynamic vacuum degassing technology to detect the composition and concentration of seven gases including  $H_2$ ,  $CO$ ,  $CO_2$ ,  $CH_4$ ,  $C_2H_2$ ,  $C_2H_4$ ,  $C_2H_6$ , etc. The device mainly consists of a degassing module, a chromatography module, a carrier gas module, and a main control module. The carrier gas module supports two methods: gas cylinder carrier gas and self-made carrier gas. The system is suitable for monitoring Dissolved Gas Analysis of oil immersed transformers/reactors with voltage levels of 35kV and above. It supports optional monitoring of micro water in transformer oil, grounding current of iron cores/clamps, ambient temperature, and  $N_2$ ,  $O_2$ , and other functions except for seven gases.

### 2. Product Image



Generator Carrier Gas Mode



Cylinder Carrier Gas mode

### 3. Performance Characteristics

#### 3.1 Ordinary Type

1. High degassing rate and no pollution: Based on vacuum degassing technology, the degassing rate is high, and the oil sample is completely isolated from the outside world, without pollution to the environment.

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2. Good stability: Real time and stable monitoring of dissolved gas content in oil, which can effectively analyze the trend of gas content changes.
3. Support local and remote alarm: The device panel is equipped with alarm indicator lights, which can be used for local alarm;The remote software interface and backend system interface both support alarm functions, and the alarm threshold can be set remotely.
4. Rich communication and flexible networking: Supports IEC61850, Mod bus, IEC103 and other protocols, compatible with third-party integrated automation systems or scheduling systems.
5. Rich system backend functions: real-time display of spectra and raw data for users to consult;Equipped with functions such as under pressure of carrier gas, device abnormalities, communication abnormalities, and concentration alarms for various components;It can display concentration trend charts of various gas components, providing a visual understanding of the dissolved gases in transformer oil.
6. Strong system scalability: The device has a wide range of optional components, which can support flexible expansion of system functions.(Including: monitoring of grounding current of transformer iron core, monitoring of environmental temperature, monitoring of micro water content in oil, etc.)

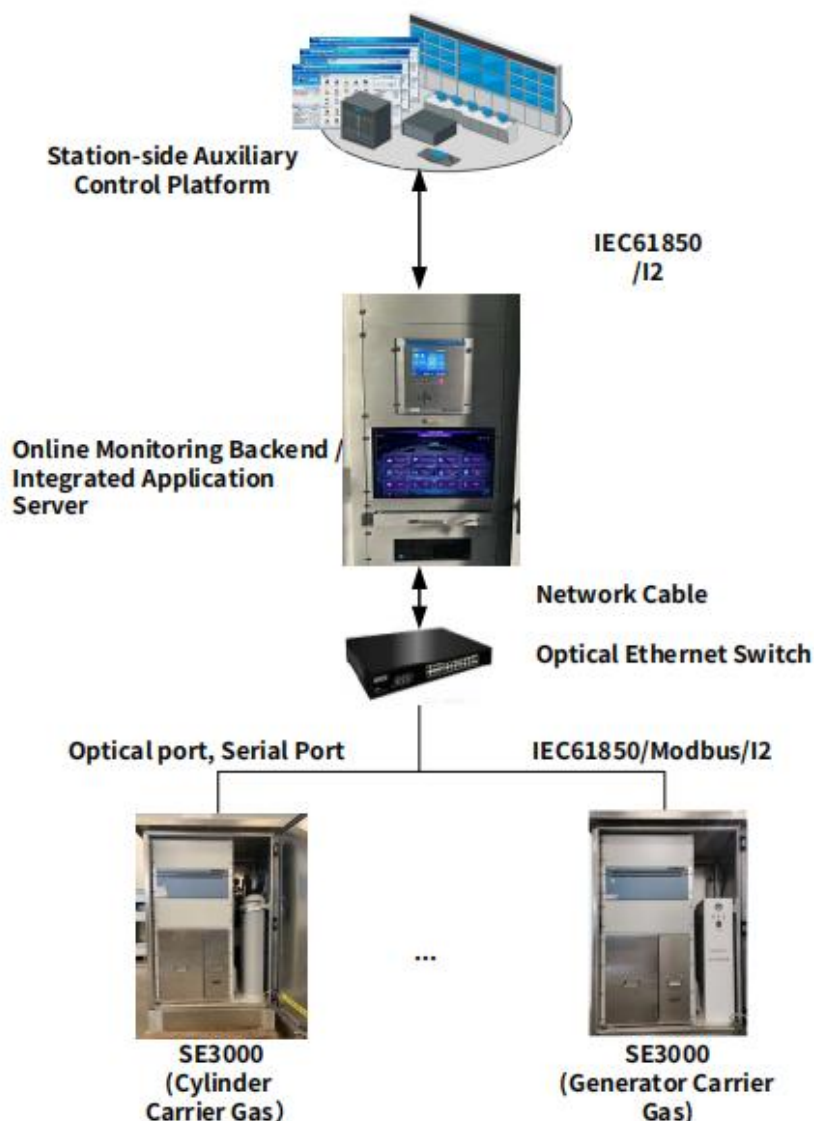
### **3.2 High Precision Type**

7. High measurement accuracy: The measurement accuracy of Dissolved Gas Analysis can reach A1 level.

### **3.3 High Reliability Type**

8. Strong reliability: Based on A1 level measurement accuracy, the minimum detection cycle can reach 1 hour, and the annual false alarm rate is less than one in ten thousand.

## 4. Product Application Topology



### 一、Product networking configuration

Serial Number	Name	Model	Quantity	Unit	Remark
1	Online monitoring device for Dissolved	SE3000	on demand	Unit	Three phase integrated transformers are configured on a per unit basis;500kV and above phase separated transformers are configured according to their phases.

	Gas Analysis				<p>Standard configuration: Detect the content of H<sub>2</sub>, CO, CO<sub>2</sub>, CH<sub>4</sub>, C<sub>2</sub>H<sub>2</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>2</sub>H<sub>6</sub> in transformer oil</p> <p>Optional: Detect the content of H<sub>2</sub>O, N<sub>2</sub>, and O<sub>2</sub> in transformer oil</p> <p>Optional: Detect the grounding current of the transformer's iron core, clamp grounding current, and ambient temperature</p>
2	Optical Switch	SE3000-SWITCH	on demand	Unit	
3	Backend cabinet	SE3000-PG01	1	Unit	
4	Backend Host	SE3000-PC01	1	Unit	/
5	Rack mounted LCD display	SE3000-PM01	1	Unit	
6	Auxiliary Materials	/	1	Set	Includes various types of cables, oil chromatography universal auxiliary material package