B10 Multi-parameter Online Monitoring Equipment Transformer Bushing

KGT®
Instruments & Equipment

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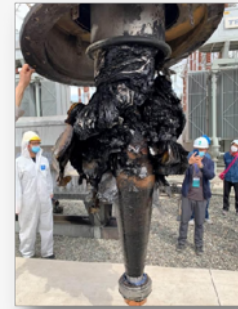
> dielectric loss、capacitance、magnitude of partial discharge

> dissolved hydrogen, oil temperature、oil pressure

In recent years, the failures and accidents of AC casing occurred frequently, which seriously affects power network security and causes huge economic loss and negative social impact in our country.
> In November 2019, the main transformer bushing failures of 1000kV UHV Quanchen Station, leading to transformer combustion.
> In April 2020, the A-phase high-resistance bushing failures of the Striata line in Xinjiang 750kV Wucaiwan Station resulted in high-resistance fire.

At present, the running state of bushing mainly depends on the preventive test carried out during periodic power outage. After the bushing test, the operation and maintenance personnel know nothing about the running state of bushing until the next test or failure, and there is a monitoring "blind spot".

Capacitive Transformer Casing   Capacitor Core Burst   Breakdown To The Ground

Sensor

Control cabinet

High accuracy

High reliability

High integration density

Intranet data center

Cloud server

Monitoring system diagram

Signal collection unit

Data transmission unit

Data analysis unit

Multi - parameter condition of less oil equipment structural diagram of the online monitoring equipment is mainly composed of three parts: a signal acquisition unit, a control cabinet unit and a data analysis unit.

> The signal acquisition unit is responsible for sampling data of H2, oil temperature and oil pressure, dielectric loss, capacitance and magnitude of partial discharge.

> The data transfer unit will sample data for calculation, display, data relay and upload.

> The data analysis unit is responsible for data analysis, warning and diagnosis.

The visualized free analysis scenario is developed in the background. Based on big data accumulation and artificial intelligence training, remote monitoring, risk assessment and intelligent diagnosis of equipment running state can be realized.
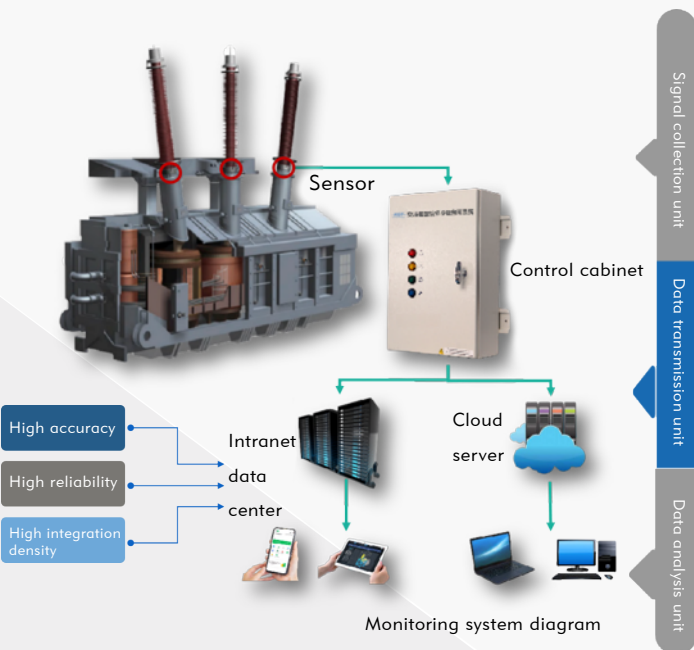
Electrical Parameter Monitoring

> Capacitance: 100pF ~ 50000pF, the error is not more than ±(standard reading ×0.5%+1pF);

> Dielectric loss factor: 0.001-0.3, the error is not more than ±(standard reading ×1%+0.001);

> Magnitude of partial discharge: Minimum measurable <50pC, 0.5MHz ~ 30MHz bandwidth >2MHz, transmission impedance >5mV/mA, linearity error <15%.

* According to the installation mode, the relative and absolute dielectric loss, capacitance can be selected.

Physicochemical Parameter Monitoring

> dissolved hydrogen：20ppm~5000ppm, error <20ppm;

> oil temperature：-40℃~105℃, error <±1℃;

> oil pressure：0MPa~1.0MPa, error <0.1kPa.

只为给你更好的测试体验，只为让我们成为更好的自己!

Keep Greater Testing, Keep Greater Together!

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High-frequency coil

Low-frequency coil
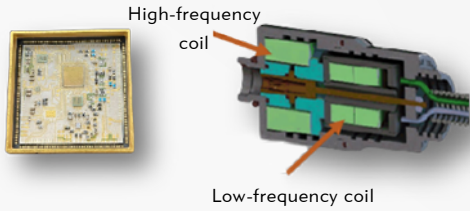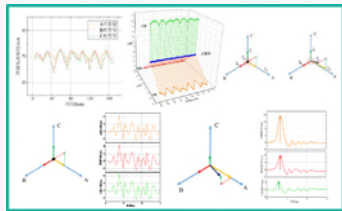
SiP Encapsulation Chip Sensin

Miniaturized Broadband Domain Current Sensor

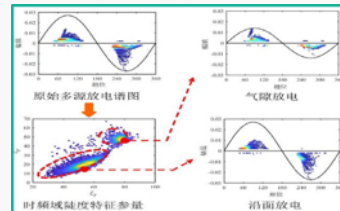Multi - parameter Acquisition And Processing Unit

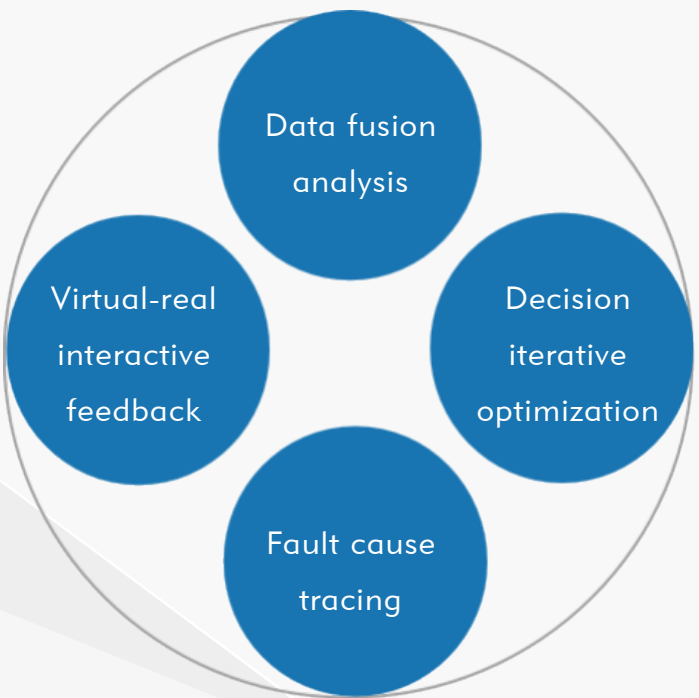hydrogen - oil Temperature - oil Pressure Fusion Sensor

Insulation Diagnosis Based On Synchronous Vector Method

The sampling current vector and mode value of casing are used as abnormal criteria to eliminate the error caused by the change of environmental factors and load.

原始多源放电谱图　气隙放电

时频域隐度特征参量　沿面放电

Multi-defect Source Discharge Separation Technology

The time-frequency signal of discharge pulse is analyzed to realize discharge - separation - location - recognition of multiple defect sources.

Data fusion analysis

Virtual-real interactive feedback

Decision iterative optimization

Fault cause tracing

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Installed in China XD Electric Co., Ltd 's transformer substation

Pass the transformer series examination test

330kV transformer

Optimize the temperature and humidity environment of the control cabinet, ensure long-term stable operation

ShenMu transformer substation-750kV

The results are applied to ultra-high voltage power grid

XinZhu transformer substation-330kV

In operation for more than 400 days, continuous and steadily

只为给你更好的测试体验，只为让我们成为更好的自己!

Keep Greater Testing , Keep Greater Together !