

Fault Diagnosis of 10kV Bus Line



Overview

Circuit Breaker Failure to Operate or Maloperation: Check the energy storage mechanism, closing/tripping coils, auxiliary switches, and secondary circuits. The invention discloses a method for identifying a single-phase disconnection and ground falling fault of a 10kV distribution line based on bus zero-sequence voltage information, which is used for a neutral point ungrounded distribution system and mainly solves the problem that the single-phase. Common Fault Types 10kV distribution lines experience a variety of fault types, with common faults including cable grounding faults, joint burnout, transformer internal faults, SF6 cabinet insulation abnormalities, grounding system problems, and secondary circuit/relay protection anomalies. Cable. 10kV high-voltage switchgear is widely used in power systems and has dual functions of control and protection. With the increasing expansion of power grids and the popularization of unmanned management mode and integrated automation of substations, the safe operation of high-voltage switchgear is. In order to improve the distribution of network fault finding, isolation and restoration line, Firstly, the paper analyzes the current situation of 10kV distribution lines and the types and characteristics of the fault, The local intelligent processing principle to solve the complex problem of. The CT Trouble function in the B30 and B90 relays detects this condition by using a low-set differential element, typically set around 10% of the least heavily loaded circuit connected to the bus, that asserts after a settable time delay. The CT Trouble alarm can be sent via SCADA to operating.

Article Content

Mar 24, 2026

A fault diagnosis method of double-layer LSTM for 10 kV ...

At present, research of cable fault diagnosis based on artificial intelligence mainly takes statistical characteristics as inputs, which means the appropriateness of statistical characteristic

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Bus network decomposition for fault detection and isolation through ...

To the best of our knowledge, using PLC systems for soft fault detection and isolation (FDI) in complex networks, as bus networks, has not been investigated yet. This paper presents a

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(PDF) Diagnosis of Fault in IEEE 14 Bus System with

When fault occur in the transmission line of IEEE 14 bus system, all the parameters of synchronous generator will be affected.

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(PDF) Research and Application of Automatic Fault

This paper takes the equipment of a specific project as an example to develop an automatic fault diagnosis and isolation device for 10kV overhead line

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Fault Diagnosis for Terminal of 10-kV XLPE Cable Based on the

The 10-kV cross-linked polyethylene (XLPE) cables are widely used in urban distribution networks, of which the cable terminals are the weak links. In this article, the fault diagnosis for terminal of 10-kV

Sep 14, 2025

Fault Detection In IEEE 9 Bus System Using Matlab & Simulink

Faults in power systems, such as short circuits or line-to-ground faults, can cause severe disruptions, leading to equipment damage, power outages, and economic losses. Hence, the need for accurate

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The fault identification method is based on the power frequency component of the bus zero sequence voltage, has low sampling requirement, does not need to additionally increase a detection...

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Research on Fault Diagnosis of 10kV Distribution Lines and

Common Fault Types 10kV distribution lines experience a variety of fault types, with common faults including cable grounding faults, joint burnout, transformer internal faults, SF6 cabinet insulation

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Research on modularizing design of 10 kV switchgear with line outlet ...

Therefore, it is urgent to design a novel high-voltage switchgear to realize live maintenance and improve the reliability of switchgear power supply. This paper analysis the failures of the current

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Paper Title (use style: paper title)

The main feature of the proposed technique is that it can differentiate between faulty and noisy signals and recognize the fault's location quickly and with high reliability. Keywords Fault diagnosis, IEEE

Sep 09, 2025

On-line detection and fault diagnosis system of 10kV high voltage ...

The high-voltage switch cabinet fault online detection system designed with CAN bus has better reliability, openness and anti-interference than the detection system using BITBUS bus and RS-485

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Research and Application of Automatic Fault Diagnosis and Isolation ...

By analyzing the principle of automatic fault diagnosis isolation device and system integration module, the application of automatic fault diagnosis isolation device system is discussed.

Nov 26, 2025

Fault Diagnosis in a 10 kV Transmission Line Using a One

Efficient and accurate identification and diagnosis of faults are essential for the effective operation of power systems. The existing data-driven fault diagnosis methods typically encounter challenges

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Fault Location for 10kV Distribution Line Based on ...

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On-line detection and fault diagnosis system of 10kV high voltage ...

The structure of the high-voltage switch cabinet fault online detection system is shown in Figure 1. Figure 1 Structure diagram of high-voltage switchgear fault online detection system The whole

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Study on fault diagnosis and recovery mechanism of 10kV railway

Experimental results show that this fault diagnosis and recovery mechanism can significantly enhance the fault handling efficiency and reliability of 10kV railway power supply lines, providing strong support

Feb 01, 2026

(PDF) A Novel 10kv Switchgear Bus Arc Protection Based

Abstract and Figures 10kV switchgear bus arc protection based on current lockout criterion has the disadvantage of insufficient sensitivity when single-phase fault occurred.

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Original Papers/Rapid Communications/Notes/etc

When fault occur in the transmission line of IEEE 14 bus system, all the parameters of synchronous generator will be affected.

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Methodology to differentiate type of single-phase line break fault in ...

Single-phase line break and grounding fault frequently occurs in 10kV distribution networks, threatens the safe and stable operation of power grid and damages people's lives and

May 28, 2026

(PDF) Lightning Fault Location of 10kV Distribution

However, multi-level branch lines also make fault location more challenging. This paper proposes a lightning fault location method for distribution

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Analysis and Measures of 10kV Bus PT Breakdown Accident

A 10kV bus PT breakdown accident caused by two-phase grounded is mainly introduced in this paper. Firstly, the bus voltage variation is analyzed when two-phase grounded occurs. Then, the

May 21, 2026

Bus Protection Theory

However, a specific busbar may have multiple bus segments, with individual circuits that connect to different bus segments depending on operating needs. For such complex buses, busbar protection

Jul 12, 2025

Fault Analysis and Automation Technology of 10kv Distribution Line ...

In order to improve the distribution of network fault finding, isolation and restoration line, Firstly, the paper analyzes the current situation of 10kV distribution lines and the types and characteristics of the

Dec 25, 2025

Fault Diagnosis and Troubleshooting of 10kV High

Use infrared thermography to detect overheating of busbar joints that prevents insulation failure in 10kV systems.

Mar 02, 2026

Faults and Handling of Single-phase Grounding in 10kV Distribution

Detect and locate single-phase ground faults using insulation monitoring, ZCTs, and auto-selection devices.

Feb 09, 2026

INFO-RF-based fault diagnosis and analysis method for busbars

This paper presents a method for busbar fault diagnosis and analysis that combines the weighted mean of vectors (INFO) algorithm with the Random Forest (RF) model.

Feb 22, 2026

Fault Detection and Classification of Power System

Different types of faults in busbar are classified using the bus voltages and line fault current. In this paper, we have proposed an effective way of fault

Dec 12, 2025

System for 10kV fault line detection

The invention discloses a system for 10kV fault line detection and belongs to the field of fault detection and relay protection of electric systems. The system comprises a 10KV bus and a far-end remote

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