

The Role of Relay Protection in Light and Heavy Gas Discharge



Overview

The main difference between light and heavy gas protection lies in the relay's setting values: light gas protection only issues an alarm signal without tripping, while heavy gas protection directly initiates a trip. The zero-sequence voltage equals the vector sum of. Gas Relay The role of: The gas relay is the primary protective device for internal faults in oil-immersed transformers; it is installed on the connecting pipe between the transformer tank and the oil conservator. When an internal fault in the transformer causes the insulating oil to decompose and. The Buchholz relay provides early warning and protection against incipient (minor) internal faults that, if left undetected, can develop into serious faults and cause transformer failure or explosion. Unlike electrical protection relays that rely on current and voltage measurements, the Buchholz. For transformers with a capacity of 0.4 MVA and above, primary voltage of 10 kV or below, and delta-star winding connections, two-phase three-relay overcurrent protection may be used. To further enhance the sensitivity of gas relays for the heavy gas alarm, this paper takes the BF type double float gas relay as the research object and proposes a new method for heavy gas setting, which is based on the internal oil flow acceleration characteristics of the gas relay. It is named after its inventor, the German engineer Max Buchholz, who developed the relay in 1921.



Article Content

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Protective Relaying Principles and Applications

Protective Relaying Principles and Applications The article provides an overview of protective relaying principles and their

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Types and Revolution of Electrical Relays

Types and Revolution of Electrical Relays Introduction: Protective relays work in concert with sensing and control devices to

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Research on the heavy gas operation characteristics of the gas relay ...

Gas relays are critical non-electrical protection devices for oil-immersed transformers. However, their heavy gas

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Use of a Gas Discharge Tube to protect mains relay

My theory was that replacing the FET device with a relay would give it greater robustness to transients, but I am now considering

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Gas Discharge Tubes (GDT) | Circuit Protections

Gas Discharge Tubes Abbreviated as GDT Gas discharge tube is the most widely used switching device in lightning protection

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Buchholz relay

Buchholz relay In electric power distribution and transmission, a Buchholz relay is a safety device mounted on some oil-filled power

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The Role of Protection Relays in Power Systems and an

Protective relays are critical in power systems because they serve as decision-making devices that ensure the safe

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Gas discharge tubes: design, selection and surge protection

Overview of gas discharge tubes with key parameters, applications, and design-in tips for surge protection in

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Transformer Buchholz Relay: Working Principle, Operation

Learn how Buchholz relays protect transformers with Light gas alarm and Heavy gas trip operations with practical

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Reducing Arc Flash Risk with the Application of Protective Relays

Analyzing the settings of existing relaying systems and applying the multiple protection, control, and communication functions of

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Research on the Heavy Gas Setting Method of Oil-Immersed ...

As the key non-electric protection equipment of an oil-immersed transformer, the gas relay plays an important role in

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Research on Characteristics and Calibration Method of Gas Relay of ...

Non-electric relay protection mainly includes heavy gas protection, light gas protection, pressure release protection and quick-acting

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Basic Theories of Power System Relay Protection

This chapter first introduces the basic theories of power system relay protection, summarizes the functions and basic requirements of

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Application of Gas Discharge Tubes in Power Circuits

The main reason is that some characteristics of gas discharge tubes are easy to be neglected at the beginning of the design; the

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The Role of Gas Relays in Distribution Transformers

Upon detecting a fault the gas relay will trigger a signal to the circuit breaker to disconnect and protect the

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The Purpose Of Transformer Gas Relay

Introduction The transformer gas relay is a protective device installed on the top of oil-filled

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Classification of gas protection

Light gas protection: overheating or partial discharge inside the transformer causes the temperature of transformer oil

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Protective relay

In electrical engineering, a protective relay is a relay device designed to trip a circuit breaker when a fault is detected. : 4 The first

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An In-Depth Analysis of Gas Relays

The gas relay fulfills its protective function by detecting these fault gases and the surge of oil flow caused by severe

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Classification of gas protection

Classification of gas protection Classification of gas protection Gas protection is generally divided into light gas and

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Gas-Actuated Relay | How it works, Application

Gas-Actuated Relay: An Essential Component in Electrical Protection Systems
Introduction

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4 Power Transformer Protection Devices Explained In Details

The power transformer protection as a whole and the utilization of the below presented protection devices are not

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Transformer Protection Systems: Gas Protection, Overcurrent, and ...

The main difference between light and heavy gas protection lies in the relay's setting values: light gas protection only issues an alarm

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Introduction to gas relay

Introduction to gas relay Introduction to gas protection During the operation of transformer, due to internal fault,

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Protective Relay Testing and Maintenance Overview

Protective relay testing may be divided into three categories: acceptance testing, commissioning, and maintenance

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Electric discharge in gases

Electric discharge in gases occurs when electric current flows through a gaseous medium due to ionization of the gas. Depending on

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Introduction to Protective Relaying | Electric Power Measurement and ...

Introduction to Protective Relaying What are Protective Relays, or Protection Relays? Protective relays are used in industrial power

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Working Principle and Selection Criteria for Transformer Gas Relays

Two-tier protection mechanism: Light gas (gas accumulation) triggers an alarm signal, while heavy gas (oil flow surge)

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Research on the Heavy Gas Action Characteristics of BF Type ...

When a minor fault occurs inside the transformer, causing oil to decompose and produce gas, the light gas contact of

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Protective Relay Basics

Traditionally, protective relays were electromechanical devices utilizing induction disk, coils, contacts, and solenoid elements to

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The Versatility of Gas Discharge Tube Protection| DigiKey

Gas discharge tubes use a fundamental physics principle to provide fast, effective protection against overvoltage

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Protective Relaying

The protective relays act only after an abnormal or intolerable condition has occurred, with sufficient indication to

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Research on the heavy gas operation characteristics of the gas relay ...

The gas relay serves as a widely adopted non-electrical protection device in transformer relay protection systems . It

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Transformer Protection Systems: Gas Protection,

Explore transformer protection strategies including gas relays, overcurrent protection, and pilot differential

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Gas Actuated Relays | Advantages

Gas Actuated Relays: Gas Actuated Relays – When a fault occurs inside the transformer tank gas is usually generated, slowly for an

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Power System Protective Relays: Principles & Practices

Abstract: Protective relays and devices have been developed over 100 years ago to provide “last line” of defense for the electrical

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