Relay protection closing self-holding



Overview

A miniature relay holding circuit, also called a self-holding or seal-in circuit, allows a relay to remain energized after the START push button is released.

Key Takeaways

Self-holding in relay protection allows a relay or contactor to remain energized after the initiating signal is removed, maintaining the circuit until a stop or reset action occurs. Principle of Self-HoldingSelf-holding, also called self-locking, is a control technique where a relay or contactor maintains its energized state even after the start signal (like a push button) is released. This is achieved by wiring a normally open (NO) auxiliary contact of the relay in parallel with the start button.

When the start button is pressed, the relay coil energizes, and the NO contact closes, forming a holding circuit that keeps the coil powered independently of the button.

Typical Wiring and Operation

Start Button (NO): Connects the relay coil to the voltage source temporarily. Relay Coil: Energizes when the start button is pressed.

Auxiliary N

O Contact: Wired in parallel with the start button; closes when the relay energizes, maintaining current to the coil. Stop Button (NC): Breaks the holding circuit when pressed, de-energizing the relay. This setup ensures that once the relay is activated, it remains closed until a deliberate stop signal interrupts the circuit.

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Applications in Protection Relays

In power system protection, self-holding circuits are used to: Keep circuit breakers or protective relays closed after a fault is detected until a reset or trip occurs. Enable sequential control in automation, where one relay's operation triggers the next step in a process. Implement interlocking and mutual locking, preventing unsafe simultaneous operations of multiple devices.

For example, in a medium-voltage network, a self-holding relay can maintain a breaker closed to isolate a faulted section while ensuring other breakers remain unaffected, enhancing selectivity and system stability.

Key Considerations

Response Time: Relay contacts must operate quickly to avoid delays in protection. Circuit Design: Parallel and series connections of auxiliary contacts determine whether the system stops immediately or completes a cycle before stopping. Safety: Interlocks and mutual locks are often combined with self-holding to prevent unsafe operations.

Self-holding circuits are fundamental in industrial automation, motor control, and electrical protection systems, providing reliable and predictable operation while simplifying operator control.

Article Content

What Is a Self-Holding Circuit? Start/Stop Control Explained

Learn how a self-holding circuit works in relay and PLC ladder logic. This beginner-friendly guide explains start and stop pushbuttons, holding contacts, output coils, troubleshooting checks, and

Self-Holding Circuit Explained with 16 Diagrams | Sequence Control

A detailed explanation of self-holding circuits using 16 circuit diagrams. Self-holding is a circuit where a relay coil maintains its ON state through its own contact — a fundamental technique

How does a Miniature Relay Holding Circuit Work?

A miniature relay holding circuit, also called a self-holding or seal-in circuit, allows a relay to remain energized after the START push button is released. This is one of the most common

User´s Manual and Technical Descriptio

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To prevent the supervision relay from providing spurious alarm signals, for instance, at circuit breaker operation, the measuring current of the control circuit is routed so as to bypass the break contact

EveryCircuit

This technique is commonly used with contactors. A NO push button connects the coil to a voltage source, the NO contact of the relay/contactor then closes and connects to the coil as well and

How to Wire 8-PIN Relay for Holding or Latching Circuit?

One common application of relays is to create a holding circuit, which maintains the state of a circuit even after the control signal is removed. In this article, we will delve into the concept of a

Practical handbook for relay protection engineers | EEP

The relay must be able to discriminate (select) between those conditions for which prompt operation is required and those for which no

Basic protection relay knowledge

A fast and selective arc fault mitigation for air-insulated LV & MV switchgear and Relion protection and control relays and sensor technology protect staff and plant facilities for many years.

Relay Control: Self-Holding and Step Control Explained | Sequence ...

Learn the basics of relay control circuits. From building self-holding circuits and releasing self-holding, to step-by-step (sequential) control — explained clearly using actual circuit diagrams.

Relay Latching Circuit using Push Button

When we press push button, supply goes to relay A1 point and relay gets ON and its contact changes, but when we release push button supply cutoffs and relay gets off.

Self-holding type relay system (Initial state)

Download scientific diagram | Self-holding type relay system (Initial state) from publication: Reliability Analyses of a Self-Holding Type Relay System by a

US7639471B2

H01H47/04 Circuit arrangements not adapted to a particular application of the relay and designed to obtain desired operating characteristics or to provide energising current for modifying the operation of

Circuit diagram for a relay holding circuit

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Learn how to easily create a relay holding circuit diagram for efficient control of electrical appliances and systems. Get the most out of your relay circuits.

Latching Logic with Relays | Self-Holding Circuit Explained with Wiring ...

In this video, we explain how latching logic works using relays, also known as a self-holding circuit. This logic allows a device to remain ON even after the push button is released, until a stop ...

Self Holding Relay || Electrical Simulation

This video explains how a self holding relay works by using a push button start and a push button stop and using an indicator light, or commonly called a series of dol starter. Watch the video...

A review on adaptive power system protection schemes for future

Protection devices such as fuses and protective relays are widely used to identify and isolate faulty areas from operational networks. These devices operate at a pre-defined protection

Relay Technical Information

For circuits such as these, please use a magnetic-hold type latching relay. If you must use a single stable relay, use a sealed type relay that is not easily affected by ambient conditions and provide a

self-holding

The appropriate product category Level Switches When the relay is triggered, the state is retained by a function called a self-holding circuit. For the 61F-GN Level Controller, electrode E2 is the self-holding

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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