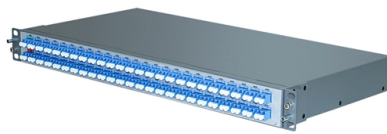


How to calculate the equivalent current of relay protection



Overview

Use this Protection Relay Setting Calculator to calculate pickup current, time multiplier settings (TMS), operating time, coordination time interval (CTI), and plug setting multiplier (PSM) using fault current, CT ratio, and IEC 60255 curve parameters. Pick Up Current Definition: The current level at which the relay begins to operate, overcoming the controlling force. These calculations are critical in industrial. The relay calculator determines the correct coil current, coil power dissipation, contact rating, pickup and drop-out voltages, and protective components needed for a relay in a circuit. It uses inputs such as nominal coil voltage, coil resistance, load voltage, load current, and power factor to. let us see how to calculate these PSM and TMS Settings of a relay. In the above figure, the over-current relay time characteristics are shown. By using these we can calculate The actual time of operation of the relay = (Time obtained from PSM & Operating time graph) * TMS From the figure shown. Information required for relay calculations NERC compliance (PRC- 019,024,025,026,027 overview) Sample application, Global settings Phase Fault Protection 87 - Phase Differential Current 50 - Instantaneous Phase Overcurrent 50DT - Definite Time Overcurrent Ground Fault Protection (High- Impedance. The generic Inverse Definite Minimum Time (IDMT) time current curve calculator will allow you to not only produce curves for standard IEC and IEEE relay characteristics but will give a trip time for a given arcing current.

Article Content

Nov 26, 2025

Microsoft Word

The protection relay adjustments are first calculated to provide the shortest tripping times at maximum fault currents and then verified to understand if tripping will also be acceptable at the minimum short

Jul 16, 2025

(PDF) Relay Protection Setting Calculation of Power

Therefore, the setting calculation method of the power transformer relay protection based on the Electrical Transient Analysis Program (ETAP) is designed.

Aug 07, 2025

Generation Protection Calculations and Settings

- Here are some (not all) Generator/GSU protection relay elements that may require coordination with Transmission protection: • Coordinate Generation/Transmission protection < every 6 years, or if fault

Apr 13, 2026

Protection Basics

Protective Relaying System Current Transformers Voltage Transformers (VTs) (CTs) Relay

Mar 09, 2026

Over Current Relay Setting Calculator

Over Current Relay Setting Formula The following equation is used to express an overcurrent relay pickup (trip) current as a percentage of the feeder load current (i.e., as a "multiple

Jul 19, 2025

Over Current Relay Setting Calculator

Overcurrent relays are pivotal in protecting electrical circuits from damage caused by excessive currents, such as those resulting from short circuits or overload conditions.

Apr 21, 2026

Over Current Relay Setting Calculations

Over Current Relay Setting Calculations This document outlines the calculation of over current relay settings for low and high settings. It details the pickup settings,

Feb 14, 2026

Protective

Thus a current differential relay is one that compares the current entering a section of the system with the current leaving the section. Under normal operating conditions, the two currents are equal but as

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Protection Relay Setting Interactive Calculator | FIRGELLI

Use this Protection Relay Setting Calculator to calculate pickup current, time multiplier settings (TMS), operating time, coordination time interval

May 31, 2026

Relay Operation Time Calculation Guide | PDF

To calculate the actual operating time of a relay, you must know: (1) the current setting, (2) the fault current level, and (3) the ratio of the current transformer. You

Nov 18, 2025

RELAY SETTING CALCULATION

Calculation for Transformer Differential Protection 87T settings : ... Rated Current @ 67 MVA at Highest tap= $MVA \times 1000 / \sqrt{3} \times KV$ 299 A Rated Current @ 67 MVA at Nominal tap=

Jan 10, 2026

Over Current Relay Setting Calculator

Enter rated current, Plug Setting Multiplier (PSM), and Time Dial Setting (TDS) to calculate relay pickup current and operation duration in electrical

Oct 12, 2025

Overload Relay Calculator - IEC: Accurate Motor

Calculate IEC-compliant overload relay settings quickly and accurately with our easy-to-use Overload Relay Calculator. Ensure motor protection today!

Jul 29, 2025

Relay Calculator

The relay calculator determines the correct coil current, and protective components needed for a relay in a circuit.

Apr 16, 2026

Relay Testing Calculator | Free Testing Tool | EleCalculator

Testing & Measurement calculator Relay Testing Calculator Professional protection relay testing calculator implementing IEEE C37.90 and NETA ATS standards. Calculate pickup values,

Sep 06, 2025

RELAY SETTING CALCULATION

Pick up current Chosen Required T803 MV Tripping Directional co-ordination O/C Relay with operating time at fault Maximum Through fault current = 0.15 In

Mar 02, 2026

IDMT Relay Time Current Curve Calculator Guide

The generic Inverse Definite Minimum Time (IDMT) time current curve calculator will allow you to not only produce curves for standard IEC and IEEE relay

Jan 02, 2026

Equivalent Circuit of a CT | Download Scientific Diagram

Download scientific diagram | Equivalent Circuit of a CT from publication: Determining CT Requirements for Generator and Transformer Protective Relays |

Oct 26, 2025

Protective Relay Basics Part 2

Part 1: Protective relay compared to low voltage circuit breaker. Review fundamental concepts, components, and terminology using the electromechanical overcurrent relay as a foundation.

Oct 16, 2025

The fundamentals of protection relay co-ordination and

Among the various possible methods used to achieve correct relay co-ordination are those using either time or overcurrent, or a combination of both.

Sep 24, 2025

Relay Current and Setting Calculations | PDF | Relay

The document defines key terms related to electrical protective relays such as pick up current, current setting, plug setting multiplier (PSM), and time setting

Jul 20, 2025

The Basics Of Overcurrent Protection

The basic element in overcurrent protection is an overcurrent relay. The ANSI device number is 50 for an instantaneous overcurrent (IOC) or a

Jan 07, 2026

Relay Pick Up Current and Settings

Relay Pick Up Current and Settings This document discusses key terms related to electrical protective relays and provides examples of calculating settings for

Apr 12, 2026

Short-Circuit Current Calculation for Protective Relaying Applications

Popularity: Protective Relaying Calculation This calculator provides the calculation of short-circuit current and relay pickup current for protective relaying applications.

Aug 01, 2025

PSM and TMS Settings Calculation of a Relay: Protection

To understand this concept easily, it is better to know about the settings of the Electromechanical Relays. If we clear the concept for these relays

Mar 29, 2026

Calculation of Relay Operating Time

In this post, we have learn about calculation of Relay operating time. Important terms like pick up current, current setting, plug setting multiplier.

Jan 15, 2026

Fundamentals of Modern Protective Relaying

Protective Relays locate faults and trip circuit breakers to interrupt the flow of current into the defective component. This quick isolation provides the following benefits:

Contact Us

For more information, pricing, or custom solutions, please contact us:

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