

Thermal Relay Protection Parameter Settings



Article Overview

The primary standard for setting parameters of thermal relay protection is IEC 60255-149:2013, complemented by IEC 60947-4-1 for motor starters.

Overview of IEC 60255-149:2013

IEC 60255-149:2013 specifies minimum requirements for thermal protection relays, including the protection function, measurement characteristics, and test methodologies. It establishes a common and reproducible reference for evaluating dependent time relays that protect equipment from thermal damage by monitoring AC current through the equipment. The standard also allows for complementary input quantities such as ambient temperature, coolant, top oil, and winding temperature to be considered in the thermal protection settings. This standard covers relays based on a thermal model with memory function, meaning the relay accounts for both the current thermal state and the history of previous overloads. Test methodologies are included to verify the performance and accuracy of the thermal protection function.

Key Parameters for Setting Thermal Relays

- Thermally Permissible Continuous Current (K-Factor) The K-factor represents the maximum continuous current the equipment can handle without overheating. It is used to scale the relay settings to match the motor or equipment rating.
- Time Constant (τ_{th}) The thermal time constant defines how quickly the relay responds to temperature changes. It is derived from the thermal model of the equipment and is used to calculate the tripping threshold based on the exponential...

Article Content

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AC Motor Protection

A protection relay setting of 30% of this value can be used to give protection without the risk of a trip due to healthy system

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How to Choose a Thermal Relay for Motor Protection?

How to choose a thermal relay? Learn star/delta motor protection, phase-loss relay selection, and correct installation to prevent

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REM610settool_opmanENb.fm

The settings for the relay thermal overload protection are calculated in the dialog shown in the figure above. The first value calculated

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THERMAL OVERLOAD CALCULATION

The Thermal Model protection is arguably the most fundamental feature in any motor protective relay. This is implemented as a

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CSM_EPSC_PS_TG_E_2_3

The problem is that you have to anticipate that drop when setting the overcurrent must-operate value for the Motor Protective Relay.

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Overload Relay Calculator – IEC: Accurate Motor Protection

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

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Thermal overload protection, 1-phase (ANSI 49) _ Setting & highlights ...

Overview The “Thermal overload protection, 1-phase” function is used to protect the equipment (reactors or resistors in the neutral

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Relay Protection Settings (PSM, TSM, EL, OL, MF)

Protection relays employ a wide range of configurable parameters to identify defects & trip the breaker in a controlled

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Motor protection: Three common mistakes and how to avoid them

Set correct overload parameters: Configure overload relays based on the motor's full load current. Accurate settings

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Line protection calculations and setting guidelines for relays ...

Protection Settings The documents presented should serve as a model to various utilities in preparing similar

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Protection Relay Setting Interactive Calculator | FIRGELLI

With this Protection Relay Setting Calculator, you'll be able to work out pickup current, time multiplier settings (TMS),

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Relay Settings Calculations

During external faults, the relay changes to high-security mode and switches from Slope 1 to Slope 2 to avoid relay mal-operation

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OPTIMIZING MOTOR PROTECTION

OPTIMIZING MOTOR PROTECTION The Advantages of a Coordination Tool for Thermal Element Setting in SEL-710 Relays By

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Setting the generator protective relay functions

Protective relay functions and data This technical article will cover the gathering of information needed to calculate

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Using the Engine Thermal Wizard for Accurate Setting and ...

The Thermal Wizard setting tool is very useful for educational purposes, especially for learning how to operate a protection relay's

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THERMAL OVERLOAD CALCULATION

The Thermal Model protection cannot be switched off, that means even with incorrect settings the relay would try and offer some

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Keep on Running—Select Motor Relay Settings to Balance Protection

Thermal protection settings of electric motors can often be challenging to set in a way that maximizes motor availability while

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CT Overload Relay Setting Calculation Guide

CT Operated Thermal Over Load Relay Current setting Calculation - Free download as PDF File (.pdf), Text File (.txt) or read online

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Relay Settings Calculations – Electrical Engineering

This technical report refers to the electrical protection of all 132kV switchgear. These settings may be re-evaluated during the

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REM 615 Relay Setting Calculations | PDF

The document provides settings for a REM 615 B relay to protect a 1900 KW, 6.6 kV motor. It includes motor data, phase current CT

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How to Determine Optimal Settings for Power System Protection Relays

Learn about the best methods and tools to choose the right settings for power system protection relays, and improve your network

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Thermal Protection Relay Function: Role, Settings and Motor

Discover the thermal protection relay function: operating principle, types, tripping classes and selection criteria to

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How to Set Motor Protection Relay Parameters Correctly

Learn about how to set motor protection relay parameters correctly. Expert guide covering key concepts, selection

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Relay Protection Setting Calculation of Power ...

Therefore, the setting calculation method of the power transformer relay protection based on the Electrical Transient

Contact Us

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

Website: <https://www.greatpremiersolutions.co.za>

Email: sales@greatpremiersolutions.co.za

Phone: +27 82 914 3675

Address: Unit 5, Silicon Heights, 22 Electron Avenue, Cape Town, 8001, South Africa

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