

Three-phase unbalanced thermal relay protection device



Overview

Differential device with phase failure and load unbalance detection. It provides a thermal adjustment dial, a manual-automatic reset selector, a test selector for simulation of a tripping, reset and stop buttons, a flag indicator and 2 auxiliary contacts 1NO+1NC for fault. Tesys D thermal overload relays are designed to protect a. circuits and motors against overloads. LR3D21L is a TeSys LRD thermal overload relay from Schneider Electric to be used with a TeSys D contactor. 5kW@400V thanks to a thermal range 12-18A, a tripping class 20, for. The CM relay is designed to provide protection against unbalanced phase currents by operating to trip the circuit breaker when a fixed percentage of unbalance exists between any two phases. When a phase loss causes a significant current increase in the remaining phases of the motor circuit, there is a major increase in rotor current that can cause motor damage. Current setting range 30-40Amp or 37-50Amp for selection, current rating 93A, working voltage 3-phase 220V~690V, insulation voltage 690V, matching 40A contactor and 63A/100A gG fuse breaker.

Article Content

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Phase Loss and Phase Unbalance

The SSOLR also provides phase unbalance protection, where the device trips if the current on any phase is 25% greater than the average of all three phases. Phase unbalances are typically caused

Jul 10, 2025

CM phase balance current relay

CM phase balance current relay The CM relay is designed to provide protection against unbalanced phase currents by operating to trip the circuit breaker when a fixed percentage of unbalance exists

Sep 14, 2025

Motor Protection Scheme

The various types of the protective relays are available for protecting the motor from different types of fault. These relays sense the abnormal operating condition and

Dec 05, 2025

POQ sensitive instantaneous detection of unbalanced currents

The POQ high-speed relay provides sensitive detection of unbalances or unbalanced faults in three-phase power systems.

May 08, 2026

Enclosure 9: TVA Class IE UVR OPC (Meeting Presentation).

TVA Unbalance Voltage Relay Design Basis Provide 100% protection against loss of safety function due to unbalanced voltages at the safety-buses, including upstream open phase events Including both

Nov 18, 2025

JR28 3 Phase Thermal Overload Relay

3 phase unbalance protection device. Overload protection, power failure protection and motor protection of thermal overload relay. There is a stretching spring flip

Mar 29, 2026

Thermal Relay : Construction, Circuit, Types & Its

Thermal relays are the perfect solution for providing protection to motors which provides the most precise tripping for the electric motor during single phasing and

Nov 15, 2025

Fundamentals of Modern Protective Relaying

A primary motor protective element of the motor protection relay is the thermal overload element and this is accomplished through motor thermal image modeling. This model must account for thermal

Mar 04, 2026

amiciSmart 3-Phase Over/Under Voltage Protection

3-Phase Fault Protection: Multi-functional and intelligent protection device. A 3-phase relay protector that is equipped with many intelligent protections i.e overvoltage,

Jun 15, 2026

CURRENT UNBALANCE: CAUSES, EFFECTS AND

Advanced motor protection relays have thermal models that can calculate heating effects of negative sequence currents resulting from unbalance.

Jul 08, 2025

What Are Thermal Overload Relays: Complete Guide to

Learn everything about thermal overload relays - how they work, types (bimetallic, electronic), applications, and why they're essential for motor

Jun 29, 2025

Overload Relay - Definition, Types, and Principle

3. Is an overload relay able to protect from short circuits? Short circuits are not protected by overload relays. Short circuit protection devices should always be

Dec 12, 2025

Phase Loss and Phase Unbalance

This device contrasts with an SSOLR with phase loss protection, which trips in less than 3 seconds and alerts the operator of a potential distribution system problem in advance of motor failure.

Oct 05, 2025

30/40/50 Amp Thermal Overload Relay, 220V, 3-Phase

30/40/50 Amp Thermal overload relay has a differential phase failure/three-phase unbalance protection device. Thermal overload relay has a detection slider/switch

Aug 12, 2025

Phase Failure Relay (Voltage Monitoring Relay):

Phase Failure Relay (Voltage Monitoring Relay) working diagram with correct wiring, applications and protection logic. Learn how phase sequence,

Jan 09, 2026

70A 690V 3-Phase Solid-State Relay with RS-485 and Overcurrent Protection

Custom 3-phase solid-state relay prototype with MCU-controlled thyristor firing, RS-485 duty-cycle command input, dual-phase current sensing, and hardware overcurrent protection plus status reporting.

Nov 02, 2025

Overload Relays | Thermal & Electronic Systems

A 3-phase overload relay protects three-phase electric motors from sustained overloads, phase loss, and unbalanced currents. It continuously monitors all three

Apr 03, 2026

Electrical Protection of 3 phase Motors: Types and

Thermostats - Thermostats are in-built protection devices that are used in protecting an electric motor. With three-phase motors, thermostats are considered unstable

Jul 09, 2025

Open-phase Protection Issues for Motors

Most three-phase motors will continue to operate with power from only two phases, but will result in overheating and failure if not protected. Most of the commonly used protective devices, such as

Nov 02, 2025

Multifunctional three-phase monitoring relays CM-MPS.23

The three-phase monitoring relay CM-MPS.23 is designed for use in three-phase mains for monitoring the phase parameters phase sequence, phase failure, over- and undervoltage as well as phase

Apr 05, 2026

Voltage Monitoring Relay for Over & Under Voltage

Trusted Voltage Monitoring Relays for Reliable Power Protection Voltage monitoring relays serve as critical safeguards against a wide array of power anomalies,

Jan 02, 2026

Power System Protective Relays: Principles & Practices

Protective relays and devices have been developed over 100 years ago to provide “lastline” of defense for the electrical systems. They are intended to quickly identify a fault and isolate it so the balance of

Apr 04, 2026

Three-phase protection relay

Find your three-phase protection relay easily amongst the 165 products from the leading brands (Littelfuse, CIRCUTOR, FANOX, ...) on DirectIndustry, the

Apr 15, 2026

PROTECTION AND CONTROL GUIDE

Electric motors are found everywhere nowadays. It is impossible to give an exhaustive list of their applications: civil engineering, port activities, material handling, conveying, air and water treatment,

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