Overheat Relay Protector Specifications

Article Overview

Overheat relay protectors safeguard motors from overheating by monitoring current or temperature and disconnecting the circuit when limits are exceeded, with models available in thermal, thermistor, and electronic types.

Types of Overheat Relay Protectors

1. Thermal Overload Relays: These relays use heat-sensitive elements to mimic motor heating. They are widely used in industrial applications for standard motor protection. Bimetallic strips bend predictably when heated by motor current, triggering a mechanical trip to disconnect the motor. They can have manual or automatic reset options and cover current ranges from 0.11-16 A and motor power from 0.06-5.5 kW depending on the model (Schneider Electric) . 2. Thermistor-Based Relays: Thermistor relays, such as Siemens SIRIUS 3RN2, monitor the motor winding temperature directly using PTC sensors. When the rated temperature is reached, the resistance increases sharply, causing the relay to trip. These relays are suitable for hazardous areas and provide precise protection even under heavy starting or inadequate cooling conditions . 3. Electronic Relays: Electronic or microprocessor-based relays offer precise monitoring of current and temperature, often with adjustable trip points, diagnostics, and communication capabilities. They are ideal for high-precision or critical industrial applications .

Key Specifications

o Current Range: Typically 0.1-80 A for ABB TA series; 0.11-16 A for Schneider Electric thermal relays .
o Motor Power Coverage: From small motors (0.06 kW) to heavy-duty industrial motors (up to 5.5 kW or higher) .
o Reset Modes: Manual reset, automatic reset, or remote reset depending on the model .
o Mounting: Many relays mount directly onto contactors for compact installation (ABB TA2X series) .
o Protection Features: Overheating, phase loss, abnormal load, and in some models, hazardous area compliance (ATEX) .

Popular Models

o ABB TA Series: TA2X range for 0.1-80 A, reliable and flexible, mounts on ABB contactors .
o Motogard Series 150: Uses PTC thermistors with snap-action response for rugged environments .
o Siemens SIRIUS 3RN2: Thermistor-based, direct winding temperature monitoring, ATEX-approved .
o Schneider Electric Thermal Relays: Manual or automatic reset, 0.11-16 A, suitable for small to medium motors .

Selection Considerations

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When choosing an overheat relay protector, consider:

o Motor type and power rating
o Current range and trip accuracy
o Reset mechanism (manual vs automatic)
o Environmental conditions (hazardous areas, temperature extremes)
o Mounting compatibility with existing contactors or motor starters . By matching the relay type and specifications to your motor and operational requirements, you can ensure reliable protection, prevent downtime, and extend motor lifespan.

A thermal relay is an electromechanical device that detects temperature changes in

A thermal overload relay is used for this purpose. If the temperature of the given system increases beyond a set point,

The overheat protector is an automatic control device that achieves equipment safety

When the disc reaches the calibrated setpoint, the Klixon protector automati-cally opens and shuts down the motor, limiting the

Learn what a thermal overload relay does, how bimetallic and melting alloy overload relays work, how NC/NO overload

Overheating protection for electric motors and heaters Electric drives must not overheat in. dmissibly, just as electric heaters must

Function and role of thermal overload protector in the refrigerator and how to use a thermal overload protector.

SIRIUS 3RN2 thermistor motor protection relays: for atypical and hazardous operating conditions

In order to protect motors against short-circuits, it is advisable to use fuses aM in conjunction with the thermal overload relay. The

Protect your electrical circuits from overheating with Schneider Electric UK"s thermal overload relays.

All motors need protection against overheating from overload, stalled rotor, or unbalanced stator currents. The inverse

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7/78 Siemens IC 10 · 2012 1) "Technical Specifications" for use of the overload relays with trip class >= CLASS 20 can

SIRIUS 3RN2 thermistor motor protection relays directly monitor a motor"s winding temperature and thus ensure reliable protection

Temperature protection devices are used to protect internal circuits or devices from overheating. The resistance of

Introduction Motor starter protectors/circuit breakers Overload relays SIRIUS 3RU2 thermal overload relays SINOPLUS

What are the overload protectors and their function in refrigerators and air conditioners? An overload protector is an

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