



Panel Mounted Class 48

Ambient Temperature other than 40°C

For a thermal overload relay in an ambient temperature higher or lower than the motor 40°C (104°F), the overload trip current can be calculated by applying a correction factor from the curve in Figure 1.

Ambient temperature is the temperature surrounding the overload relay enclosure. Normal temperature rise inside the enclosure has been taken into account in preparing the heater tables.

Thermal Overload Heater Elements

The heater element code number has a prefix letter which identifies the type of

overload relay with which the heater is used and its tripping function. E and K type heater elements are applied to bimetal overload relays. The E type gives a standard trip (Class 20) and the K gives a quick trip (Class 10).

In Figure 2, representative trip curves illustrate the trip time for overload relays with H, E and K heaters. The graph shows time to trip in seconds for multiples of overload relay trip current. NEMA has classified overload relays in three classes:

1. NEMA Class 10 for protecting submersible pump motors, hermetically sealed

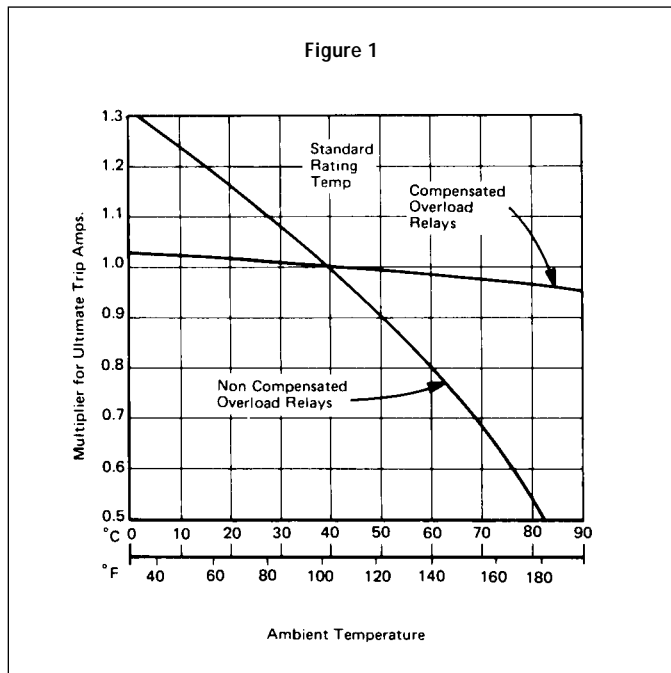
refrigeration motors, etc., trips in less than 10 seconds at 6 times trip current.

2. NEMA Class 20 for protecting standard motors trips in less than 20 seconds at 6 times trip current.

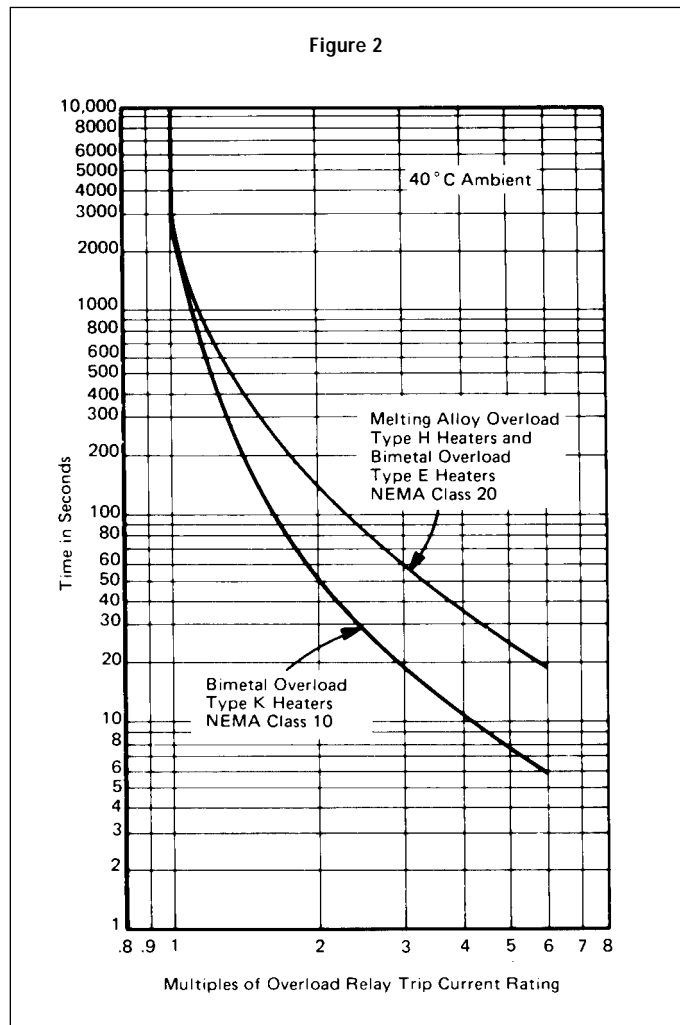
3. NEMA Class 30 trips in less than 30 seconds at 6 times trip current.

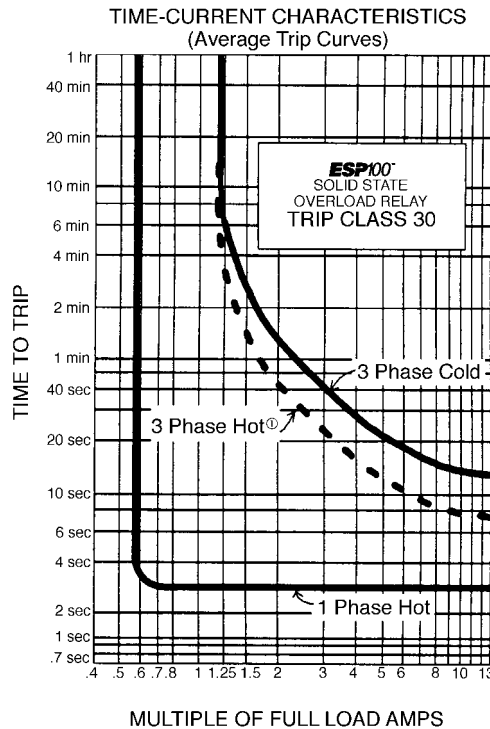
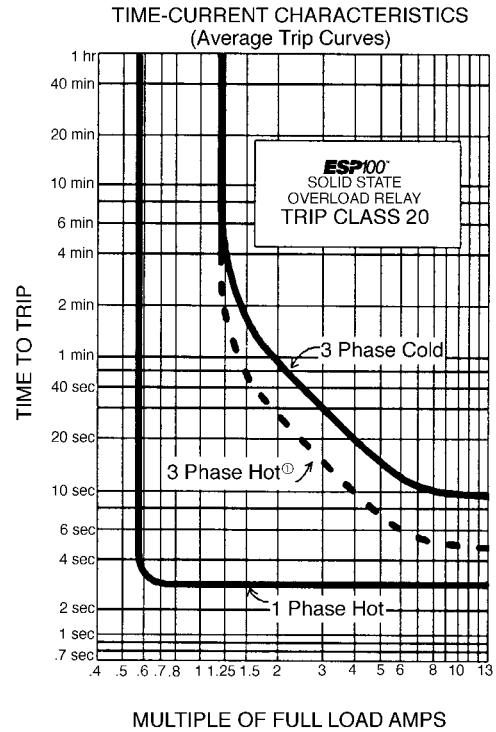
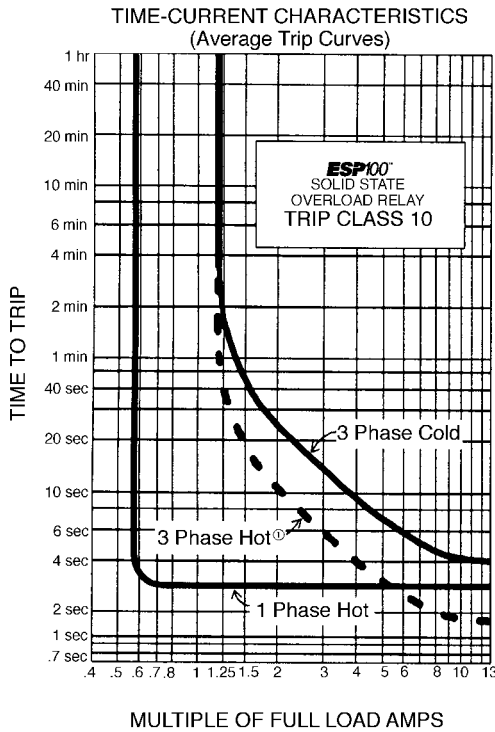
Note: The trip current in a 40°C ambient temperature is 125% of the minimum full load current listed in the heater tables, unless otherwise shown.

Thermal Overload Relay Ambient Temperature Correction Factor



Thermal Overload Relays Trip Characteristics





Ⓢ Hot trip times will vary depending on previous running condition, duty cycle, and length of "OFF" time.