



Panel Mounted Class 48

Features

- Broadest Line in the Industry
- NEMA Class 10, 20 and 30 Trip Curves
- Trip Free Design
- Solid State Overload
 - Phase Loss Protection
 - ±2% Repeat Trip Accuracy
 - Manual and Self Reset Versions
 - FLA Adjustment Dial with Wide Adjustment Range
 - Heaterless Design
- Bimetal Ambient Compensated Type
 - Automatic or Manual Reset
 - ±15% Setting of Nominal Trip Current
 - Manual Test Button, 3 Pole
 - NO Alarm Contacts, 3 Pole to 60A
- UL Listed File #E22655 or Component Recognized
- CSA Certified File #LR6535

Application

ESP100 **solid state overload** relays are self powered, requiring no separate 120V source to power the circuit board. They provide phase loss protection, fewer connection points and high repeat trip accuracy which results in longer motor life and cost savings. NEMA Class 10, 20 and 30 trip curves are available for a variety of applications.

The heaterless construction of these overloads minimizes energy costs and the costs of cabinet ventilation or cooling. Solid state overloads can be used at temperatures from -30°C to +70°C and are rated for 50Hz and 60Hz applications.

Three other solid state overloads (the 3RB10, 3RB12, 3UF5) that conform to IEC standards can be found on pages 246-249. The 3RB10 provides similar features to the ESP100, but in a more compact design. The 3RB12 is also similar to the ESP100 but contains more advanced features such as ground fault protection, adjustable trip class and

three LED displays. The 3UF5 offers many more advanced features including: ground fault and adds a PROFI-Bus and RS232 port for communication.

ESP100 panel mounted overloads can be used to upgrade existing starter applications where panel mounted thermal overloads are used. In addition, ESP100 overloads can be panel mounted when used with other types of controllers, such as DP, IEC contactors, and soft starts.

ESP100 overloads can be used on high voltage applications, making them ideal for use with vacuum contactors and other high voltage control.

ESP100 overloads can be retrofitted on existing Furnas contactors using the retrofit plate suffixes or on other brands using the plates listed in the competitive retrofit plates table on page 483.

The self-reset overload option is ideal for cranes, hoists, and other applications where the controls are mounted in a remote location that may be difficult to access. The NC overload contact opens for a short duration (50-75 msec) on an overload or phase loss condition. The unit provided can be applied in one of three ways: 1) Three wire control circuit using Furnas Size 0-4 contactor. The self-reset overload can be retrofitted and applied in a three wire control application as a remote reset overload without additional components or wiring. 2) PLC—(assuming initiating starter coil via PLC) Timers and counters can be used to determine time between restarts and maximum number of restarts. 3) Use NC overload contact to drop out a control relay. See wiring diagrams on page 490.

Thermal overload relays are used to protect motors from excessive heat resulting from sustained motor overload, too rapid cycling and stalled rotor. The percentage of overload determines the length of time required to open the circuit.

Automatic reset is desirable where control is not readily accessible or regularly attended.

Features

The ESP100 **solid state overload** provides phase loss protection for the motor by tripping within three seconds upon complete loss of one phase of a three phase motor branch circuit.

Each overload has at least a 2:1 current adjustment range with the adjustment dial reading out in full load amps. In addition to the markings on the dial there are audible clicks which allow for extremely fine tuning.

Features of the 3RB10 Solid State Overload can be found on page 259 and features of the 3RB12 on page 261. Features of the 3UF50 SIMOCODE-DP can be found on page 266.

Thermal Bimetal Ambient Compensated overload relays offer:

- Automatic or manual reset adjustment.
- A manual test button is provided to test the operation of the 3 pole overload relay control contacts.
- ±15% nominal trip current adjustment.
- Accept either standard Class 20 or Quick Trip (NEMA Class 10) heater elements without any other changes or adjustments.
- Available with a normally open contact for an alarm circuit (SPDT) up to 60A.
- Compensated bimetal overload relays provide a constant trip time in ambient temperatures from -20°F to +170°F for a given heater rating.

