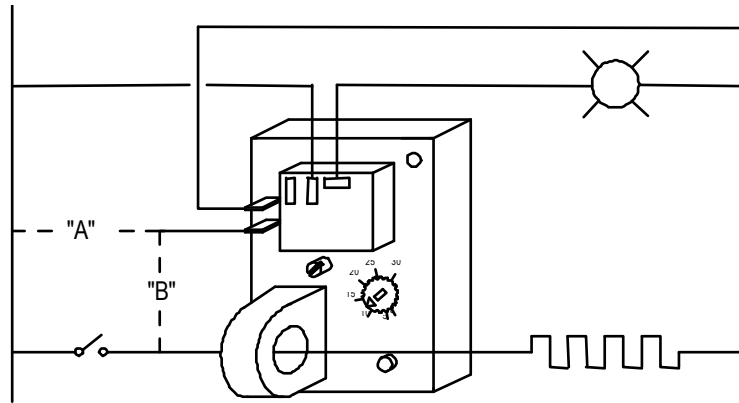


# Detecting Open Heaters and Lamps with the CR4395 Current Sense Relay

The CR4395 current sensing relay can be used as an effective way to monitor the operational status of heaters and lamps. Most loads of this type have an open circuit failure mode. The EL version (active below set-point) current can be utilized. Upon failure of the load, current ceases, and the relay activates.



- In cases where the current is cycled on and off, as in most heater applications, the connection scheme “B” can provide effective sensing. The CR4395 is powered by the controller output. Used in this fashion, the relay will only monitor the load when the load is active.
- The unique design of the CR4395 guarantees correct sensing of the load as the power is cycled on and off. Using tested power supply designs, the sensing circuitry and trip level are parametrically matched, eliminating false trips and timing problems.
- For continuously powered loads, circuit “A” is used. The output relay can then be used to drive alarms and indicators.
- The CR4395 comes standard with a mechanical relay that provides a Form C single pole contact. Other outputs such as transistor and triac switches are available as options. Typically, the mechanical relay is used to provide higher current switching for other motors and loads, and the solid state options are used to interface with digital and PLC circuitry, which eliminates switch bouncing.
- A latching version is available that can be used to force reset when a trip occurs. The relay, once tripped, stays tripped regardless of current level sensed, until power is reset. This version is only applicable to circuit “A”, since power is constantly set and reset in circuit “B”.
- Time delay units can be selected for circuit “A” on some controlled heater applications. The time delay must be set longer than the longest “off” time for proper operation.
- Circuit “B” can only be used on controllers that are “zero-cross” or utilize full cycles of the ac power supply. Phase-fired SCR controls or devices that use portions of the power waveform to regulate power will not function properly.