

## CTMB APPLICATION NOTE

### USING THE CTMB AS A HEATER BREAK ALARM

The CTMB is easily set up to be an over/under current detecting device by adjusting the onboard pots such that there is a 5A detection window. If the load is 2.5A over or under the setpoint, the CTMB flags the error and reports it by opening a relay contact and flashing an error LED on the board providing visual detection.



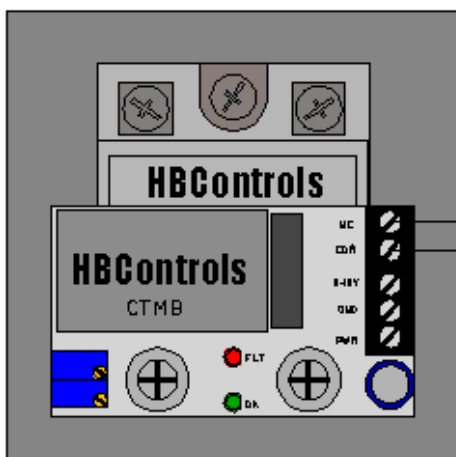
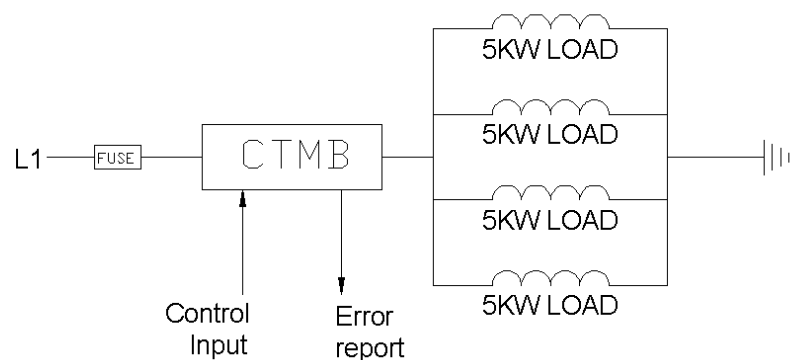
The following is an example of how these benefits can be realized:

Suppose you have a heating load that consists of (4) 5KW heaters operating at 480V (41.67A total) using one relay to control the entire heater bank. If one of the heaters fails the load decreases by 10.42A and the process controller will increase the heat output of the remaining 3 heaters. No failure will be noted until a second heater fails and that may be too late. With the CTMB monitoring the heaters, when one drops out, the loss of 10.42A will be detected and flagged as a greater than expected current fluctuation. This will allow an operator to correct the situation before a catastrophic failure occurs.

Another common problem is the situation where a heater grounds out resulting in a current increases but failure is not immediately detected by the system. In this case, as the current increases above the 2.5A error point, an error is detected and the problem is flagged.

Yet another useful feature of this product is that it provides a Proportional output (0-10V over 50A). This can be used to monitor current in order to evaluate system performance and provides an input signal for a process controller or PLC for proportional control in a closed loop system.

SIMPLIFIED DIAGRAM



These terminals remain "closed" as long as current remains within the user-set range. If heater draws too much or too little current, terminals "Open" and the red LED flashes fast if over-current and slow if under. Once condition is corrected, error flag is automatically cleared.