General Description

The Watlow SBL card is a stand-alone control card which accepts a proportional 4-20mA command signal from a temperature control. It provides a variable time-base, proportional output for a zero cross-fired, DC input solid state relay (SSR). The SBL can drive one SSR for single phase or two SSRs for three-phase, two-leg applications. The SBL is loop powered from the 4-20mA, so there is no need for an external power supply. It easily attaches to the SSR input terminals, making it a compact power control with a variety of voltages and amperages limited only by the SSR’s output.

Specifications

- **Power Requirements:** 4-20mA DC current. Temperature controls must provide at least 7.5VDC (375Ω SBL input impedance).
- **Linearity:** Within ±3% over a 20 to 80% power region.
- **Operating Temperature:** 32 to 122°F / 0 to 50°C 0 to 90% RH, non-condensing.
- **Firing Mode:** Variable Time Base @ 50% power, 3 cycles ON, 3 cycles OFF, zero-cross switching with 1/2 cycle resolution.
- **Output:** 3.5VDC minimum. Current is dependent upon the SSR input impedance.

Dimensions

![Dimensions Diagram]

**Setup Procedure**

1. Set the temperature control command signal to 20mA.
2. Adjust the Gain potentiometer until the SSR output is just full ON (LED full on).
3. Set the temperature control command signal to 4mA.
4. Adjust the Bias potentiometer for ZERO output at 4mA (LED full off).
5. Repeat Steps 1 through 4 until no further adjustment is required.
NOTE: The SBL Card can operate a maximum of 2 SSR’s wired for 3 phase-2 leg control.

WARNING: Wiring examples show L2 in 240V~ (VAC) or 480V~ (VAC) configuration. In 120V~ (VAC) or 277V~ (VAC) applications, L2 is neutral and must not be fused or switched. Failure to follow this guideline could result in death or personal injury.

NOTE: The SBL Card data sheet includes diagrams and instructions for troubleshooting with single and three-phase systems. It details wiring examples and guidelines for ensuring safe and effective operation. The SBL Card is designed to operate in various phase and voltage configurations, with options for single-phase, two-leg control and three-phase, two-leg control. Each section of the data sheet provides specific instructions and warnings to ensure proper installation and use.