

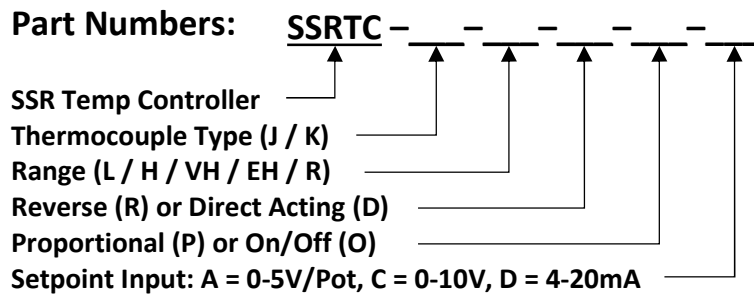
# SSRTC Solid-State Relay Temperature Control Board



- SSR mounted microprocessor temperature controller
- Small module mounts on the input terminals of an SSR
- J or K type thermocouple input
- Pot, 0-5V, 0-10V or 4-20mA setpoint input
- Output enable/disable control input
- Output and status LEDs

## Product Description:

The microprocessor based SSRTC mounts directly on the input terminals of a solid-state relay and provides a low-cost temperature control solution. The input accepts J or K type thermocouples and can be ordered for heating or cooling processes with on/off or proportional control. The setpoint can be controlled by a potentiometer or analog voltage/current. The setpoint is proportional to the voltage or current at the setpoint input.



## Input Specifications

| Specification          | Rating  |
|------------------------|---|
| Power Supply           | 10-28Vdc, 30mA  |
| Input                  | J or K thermocouple (range selections on following page)            |
| Setpoint Control Input | 0-5V, 0-10V, 4-20mA (input impedance is 20KΩ for V, 250Ω for mA)    |
| Enable / Disable Input | 10K internal pull-up for external switch, 4.5V=ON                   |
| Setpoint Accuracy      | +/-1.5% of setpoint (not including normal proportional droop error) |

## Output Specifications

| Specification                     | Rating  |
|-----------------------------------|---|
| Control Output                    | SSR Drive, DC pulse current is SSR dependent, nominally: 10V @ 15mA (24V PWR) OR 5V @ 8mA (12V PWR) |
| Response Time                     | 500msec   |
| Output Cycle Time (Proportional)  | 500msec   |
| Setpoint Potentiometer Excitation | 5V, +/-3%, 5mA Max, 5KΩ-10KΩ potentiometer is suggested   |

# SSRTC Solid-State Relay Temperature Control Board

## Thermal Specifications

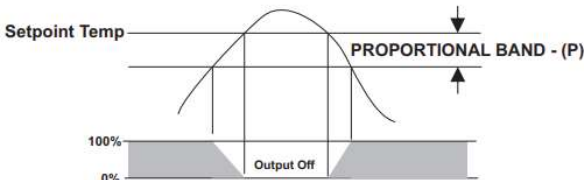
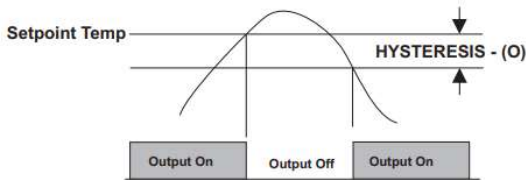
| Specification               | Rating    |
|-----------------------------|-----------|
| Operating Temperature Range | 0-60°C    |
| Storage Temperature Range   | -40-100°C |

## Temperature Range Selections

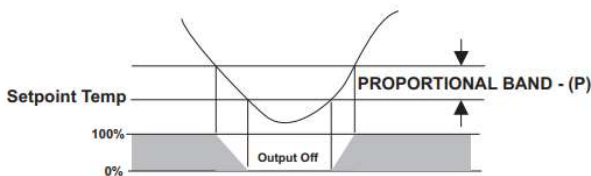
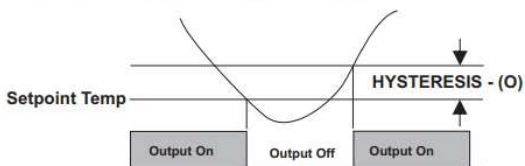
|    | Range Low (F) | Range High(F) | Range Low (C) | Range High (C) |
|----|---------------|---------------|---------------|----------------|
| L  | 100           | 500           | 38            | 260            |
| H  | 300           | 700           | 149           | 371            |
| VH | 500           | 900           | 260           | 482            |
| EH | 700           | 1100          | 371           | 593            |
| R  | 32            | 100           | 0             | 38             |

## Temperature Control Operation

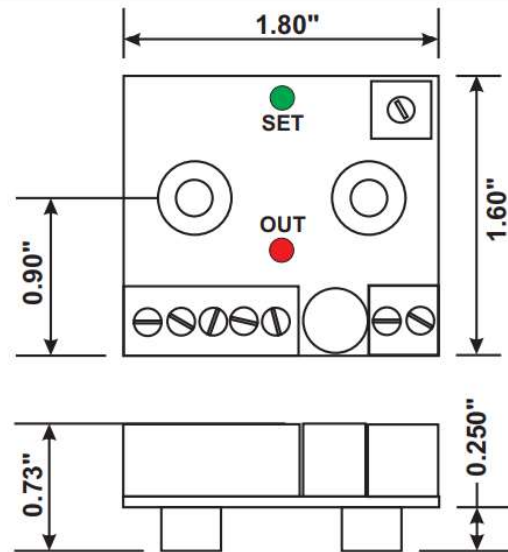
### Reverse Acting (Heating) Examples:



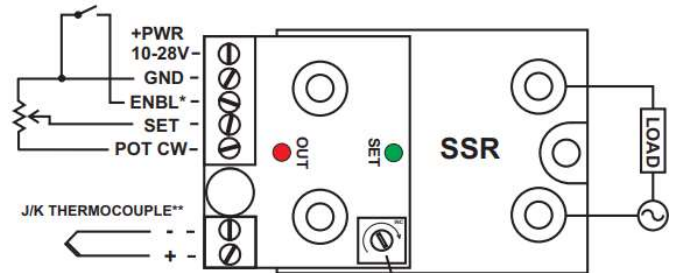
### Direct Acting (Cooling) Examples:



## Dimensions



## Wiring Example



\*ENBL HAS AN INTERNAL PULL UP RESISTOR. GROUNDING THIS LINE WILL **DISABLE** THE OUTPUT.

PROPORTIONAL / HYSTERESIS BAND ADJUSTMENT CW = INCREASE (0-25% OF FULL SCALE).

\*\*THERMOCOUPLE MUST BE ISOLATED FROM +PWR/GND.

## LED Operation

| Description          | GREEN LED (SET) | RED LED (OUT)        |
|----------------------|-----------------|----------------------|
| Power Applied        | Flash Once      | Flash Once           |
| Approaching Setpoint | Off             | On when output is on |
| At Setpoint +/-5%    | On              | On when output is on |
| Over Setpoint >5%    | Flashing Slow   | Off                  |
| Open Thermocouple    | Flashing Fast   | Off                  |