



SC-1 2-10V to 0-24V Signal Conditioner

The SC -1 Signal Conditioner

Provides signal conversion from a high impedance 2-10VDC signal source to drive a 24VDC solenoid. The control should be powered by an isolated 24VAC transformer to drive up to a .5A DC solenoid.

Modes of Operation

Valve output control mode (Default mode)

In this mode the SC-1 simply outputs a 0-24 VDC signal to drive a solenoid valve directly proportional to the 2-10VDC input signal. The output can be scaled from 0-100% by adjusting the span potentiometer on the front of the control.

Output with span adjustment works as follows:

2V input = 0V output

10V input = ~24V output when span = 100%

10V input = ~12V output when span = 50%

The span pot can be overridden in this mode by shorting terminals 3 and 4. This effectively provides two output scales for two speed applications. When terminals 3 and 4 are shorted, the control operates as if the span pot were set to 100%. For example..

2V input = 0V output

10V input = ~12V output when span = 50%

10V input = ~24V output when span = 50% but 3 and 4 are shorted.

Discharge limit control mode

In this mode the SC-1 acts as a temperature control when used with a DFTS temperature sensor. The input signal provides a reference temperature, and the internal PID algorithm will automatically drive the valve to achieve the desired discharge temperature. The maximum discharge temperature can be limited to 120, 140, or 160°F by setting the jumpers on the back of the control according to the following chart.

The scale for voltage to temperature conversion in this mode is

2VDC = 40°F

10VDC = 160°F

or $F^{\circ} = (V \text{ signal} - 2V)/8V * 120^{\circ}F + 40^{\circ}F$

SC-1 SW REV 3.0	
NO LIMIT	
120°F LIMIT	
140°F LIMIT	
160°F LIMIT	

Standard Features:

Start Up Delay

The unit will pause for 10 seconds after power is applied before beginning to drive the output.

Power/Status LED

A solid green LED indicates power and normal operation. A slow blinking green LED indicates power but the 10 second start up delay has not completed. A fast blinking green LED indicates that the input signal is out of range or may be reversed.

