

Loop Alarm™

Model SC1290 and SCL1290

INSTALLATION INSTRUCTIONS



LOVE CONTROLS

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Getting Started

- 1.) Using a small screwdriver, ball point pen, etc. set the Input Switch (SW-1) on the side of the unit for TCB (Thermocouple Break) direction, the thermocouple type, and the input range to be used.
- 2.) Set the Output Switch (SW-2) for the output responses required (see Output Programming on page 4).
- 3.) Mount unit into panel. (see Mounting on page 5).
- 4.) Connect unit to input signal, output signal, and power wiring (see Wiring on page 5).
- 5.) Check calibration (See Calibration on page 6).

Operation description is on page 6

Specifications are on page 7.

INPUT PROGRAMMING

Determine the direction of the TCB (Thermocouple Break) and set switch 1 on SW1 to OFF for upscale action or ON for downscale action (See Figure 1).

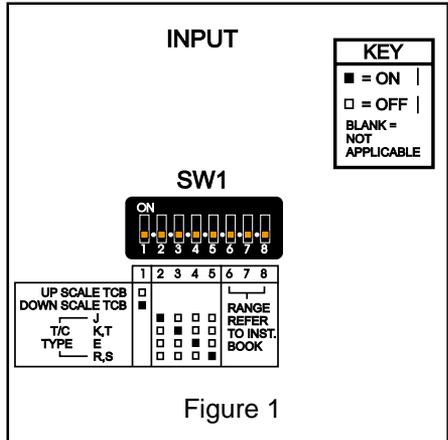
Switches 2 through 5 on SW1 allow selection for thermocouple type. Only one of these switches should be on. Turning on more than one of these switches may cause the SC1290 to operate in an unpredictable manner.

For a type J thermocouple, turn on switch 2.

For a type K or type T thermocouple, turn on switch 3.

For a type E thermocouple, turn on switch 4.

For a type R or type S thermocouple, turn on switch 5.



Use the chart (Figure 2, below) to select the input type and range for your process. Turn on the appropriate switch(s) (as indicated) on SW1 for the input range desired.

THERMOCOUPLE TYPE						SW1 SWITCH SETUP
E	J	K	R	S	T	
4	2	3	5	5	3	ON
2 3 5	3 4 5	2 4 5	2 3 4	2 3 4	2 4 5	OFF
-270 TO 150°C	-210 TO 190°C	-270 TO 250°C			-270 TO 210°C	7 8 6
-270 TO 290°C	-210 TO 360°C	-270 TO 480°C			-270 TO 390°C	6 8 7
0 TO 150°C	0 TO 190°C	0 TO 250°C	0 TO 970°C	0 TO 1050°C	0 TO 210°C	8 6 7
0 TO 290°C	0 TO 360°C	0 TO 480°C	0 TO 1760°C	0 TO 1760°C	0 TO 390°C	6 7 8
0 TO 660°C	0 TO 760°C	0 TO 1372°C				6 7 8
0 TO 1000°C						6 7 8

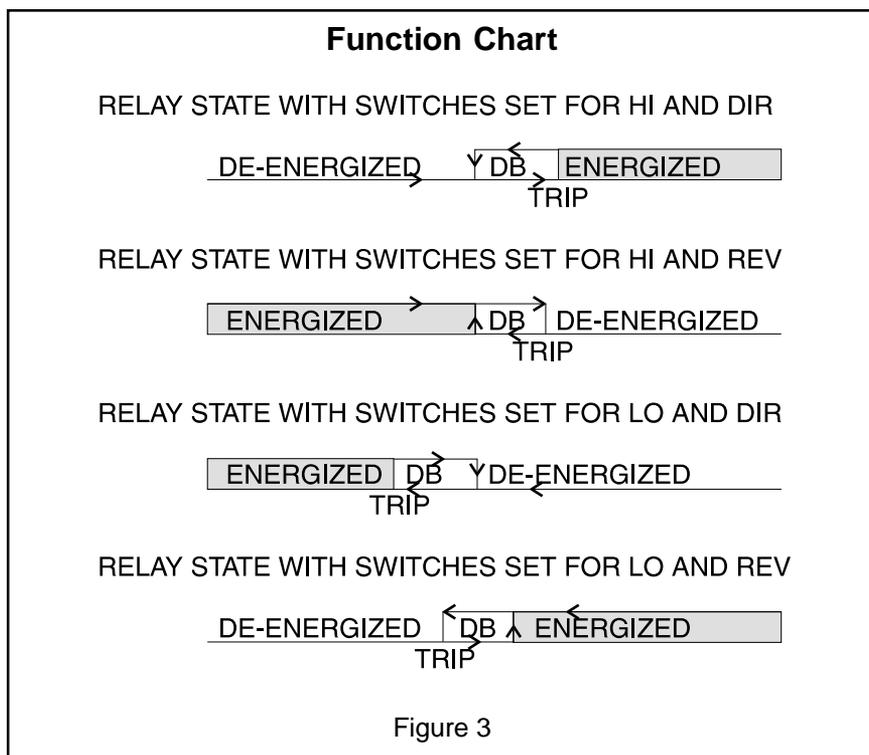
Figure 2

OUTPUT PROGRAMMING

Since the alarms can be set for reverse or direct action, high or low function, and has normally open and normally closed contacts; the number of combinations of actual output behavior is quite large.

First, decide how you want the outputs to behave. Will the relay energize or de-energize at the trip point? Will the relay trip on an increasing or decreasing signal? Is the dead band above or below the trip point?

It is important to answer these questions before setting up the module. The following Function Chart illustrates the most likely combinations of settings.



Using the Figure 4 (next page), set up the switches on SW2 for Alarm A and Alarm B. For dual alarm relays triggered by Alarm A, set switch 5 to DUAL. When switch 5 is set to DUAL (on), switches 6 and 7 have no effect.

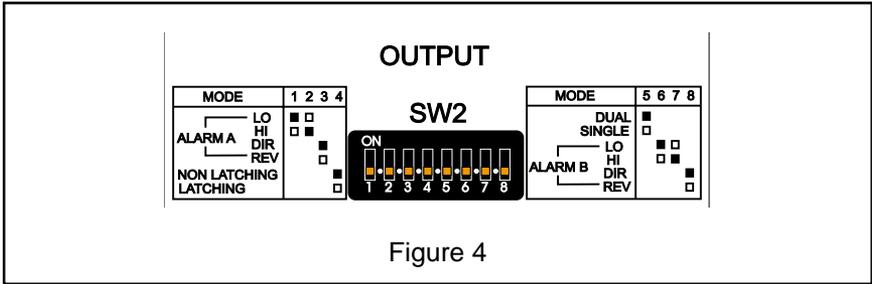


Figure 4

WIRING

Mount on DIN rail and wire per Figure 5 below.

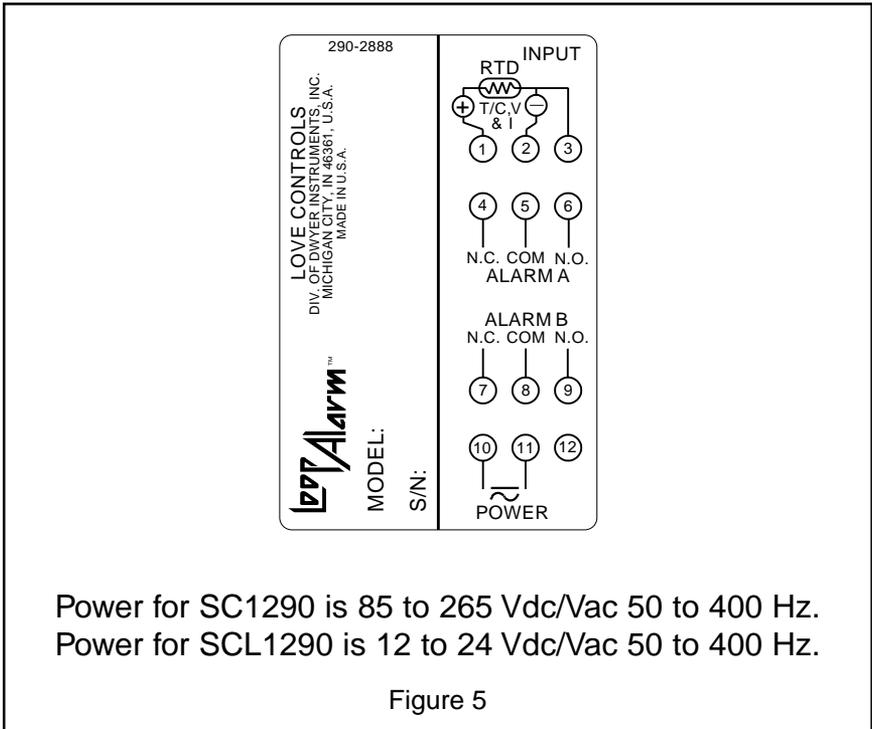


Figure 5



WARNING: Do not attempt to operate this device with the cover removed. Potentially lethal voltage is present on some of the internal components. Do not open the unit. There are no internal adjustments or user serviceable parts in the unit.

ALARM CALIBRATION



NOTE: Allow the module and socket to come to stable temperature before proceeding. For best results, allow the module to be powered in the socket for at least 20 minutes.

Refer to Figure 6 when using the following procedure:

1. Apply the appropriate input for the desired alarm trip point.
2. Adjust the alarm AL screw for relay trip (LED changes color).
3. Adjust the alarm DB screw to the full clockwise position. Change the input to the desired reset point. Slowly turn the alarm DB screw counter-clockwise until the relay resets (Alarm LED changes back to original color).
4. Move the input back to the desired trip point to confirm correct setting.
5. Move the input to the reset point to confirm correct setting.
6. Repeat as necessary.

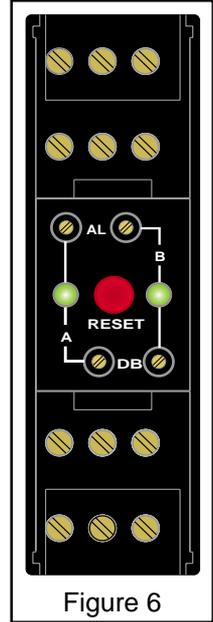


Figure 6

OPERATION

On power up the module will automatically reset the alarms provided that no alarm condition exists. It may be necessary to reset a low alarm after the process has reached normal conditions.

When the input is within set limits, both LED indicators will be green and the relay contacts will be in the state programmed for normal operation. If the input reaches either of the trip points, the relay connected to that trip point will change state and the LED connected to that point will indicate red.

When the input returns to normal (trip point plus dead band for low alarm settings, trip point less dead band for high alarm settings) and switch 4 of SW 2 is set to NON-LATCHING, the relay and LED will automatically return to the non-alarm condition. If switch 4 of SW 2 is set to latching, the red RESET button on the top of the module must be pressed to return the relay and LED to the non-alarm condition.

SPECIFICATIONS

Power Supply:

- SC1290:** 85 to 265 VDC / VAC 50 to 400 Hz.
- SCL1290:** 12 to 24 Vdc/Vac 50 to 400 Hz. $\pm 20\%$.

Isolation: 1500 V rms between outputs, input, and power.

Set Points: Adjustable 0 to 100% of span.

Deadband: Adjustable 0.25% to 100% of span.

Drift: $\pm 0.02\%$ / $^{\circ}\text{C}$ typical, $\pm 0.05\%$ / $^{\circ}\text{C}$ maximum.

Ambient Temperature Range:

- Operating:** 0 $^{\circ}$ to 55 $^{\circ}$ C (32 $^{\circ}$ to 131 $^{\circ}$ F)
- Storage:** -40 $^{\circ}$ to +80 $^{\circ}$ C (-40 $^{\circ}$ to +176 $^{\circ}$ F)

Humidity Conditions: 0 to 90% up to 40 $^{\circ}\text{C}$ non-condensing, 10 to 50% at 55 $^{\circ}\text{C}$ non-condensing.

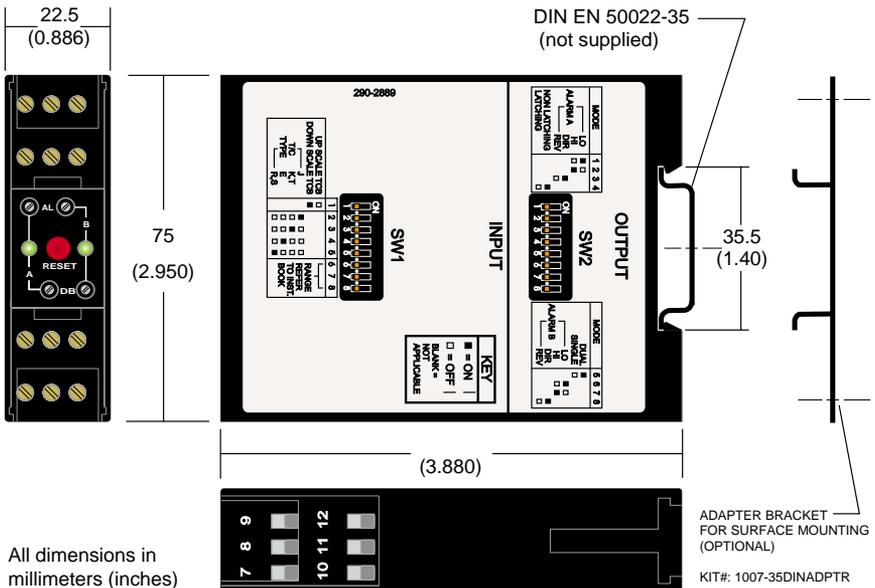
Input impedance: 3 megohms.

Relay output: SPDT, one per set point, 5A @ 250 VAC, resistive.
 Latch circuit reset: Automatic at power up. Manual with reset switch on front of module.

Indicators: One dual color LED per set point. Red = relay on, green = relay off.

Sensor Burnout Protection: Selectable, upscale or downscale.

DIMENSIONS



NOTES



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