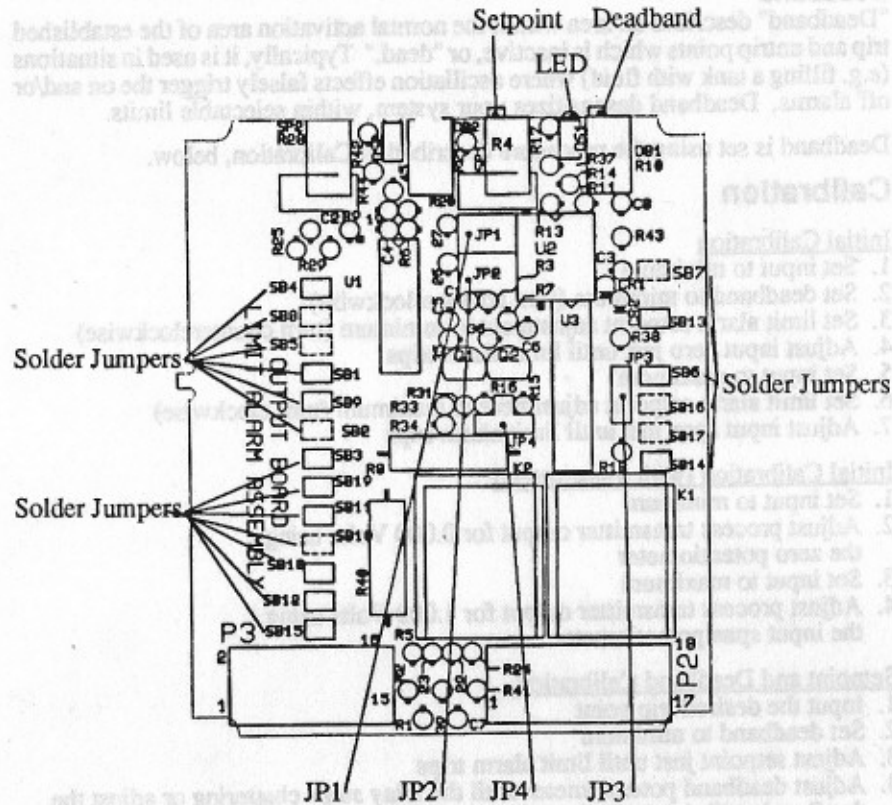


Limit Alarm Board Part Locations



NON-LINEAR SYSTEMS
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San Diego, CA 92121

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FAX: 858.535.2169
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Series 8000 Single Limit Alarm Output

Specifications

Deadband: Adjustable per setpoint, 1.0 to 100% of span
External Relay Drive: 24VDC, 15mA max, per relay
Transmitter Outputs: 1.0VDC at 1mA
Contacts: 5A at 120VDC Form C, non-inductive loads

For general Series 8000 specifications, see the Series 8000 manual, which provides general information for the entire series.

Setup Procedure

- I. Disassemble the Series 8000 unit (described on page 6 of the main manual).
- II. Remove the Limit Alarm Board.
- III. Configure the board for your requirements, according to the following instructions.
- IV. Check that no solder or pin jumpers remain closed from a previous setup which are not called for in the new configuration.
- V. Calibrate the unit as described in the main manual, page 10, and these instructions, page 80-3.
- VI. Reassemble the unit as described in the main manual, pages 4 to 6.

Setup Requirements for Using the Limit Alarm Board with Sample/Hold, LVDT, Add/Subtract, Strain Gauge or High/Low Select Boards
When using these boards (only), certain solder jumpers must be reset on the Limit Alarm Board. These are normally closed; open them for these applications.

Special Function Board

Peak Sample Hold SB5, SB7, SB8 (Setpoint transmitters and latching are disabled)

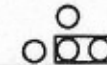
Input Boards

LVDT, Add/Subtract, Strain Gauge & High/Low Select SB5, SB8 (Setpoint transmitters are disabled)

Setup Instructions

This board includes many options. To set up for your needs, select an alarm configuration and find the heading below that covers your need. Read those instructions. The illustration on page 80-4 shows the jumper locations.

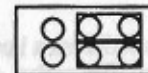
For operation, pin jumper JP4 must be in this configuration (factory standard):



Set Relay Sense

This option allows you to select high or low trip alarms. Below are illustrations of the needed connections for pin jumper JP1.

High Trip



Low Trip

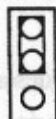


- High trip: If input \geq setpoint, then the unit is in a tripped condition.
If input $<$ setpoint, then the unit is in an untripped condition.
- Low trip: If input \leq setpoint, then the unit is in a tripped condition.
If input $>$ setpoint, then the unit is in an untripped condition.

Failsafe/Non-Failsafe Operation

Failsafe means that the limit alarm's relay, when tripped, is *not* energized (the Normally Closed and Common contacts are closed). Non-failsafe is the opposite; when tripped, the relay is energized (Normally Open and Common contacts are closed). Below are the necessary jumper pin connections.

Failsafe JP3



Non-failsafe JP3



Remote Setpoints

For the Series 8000 Limit Alarm board, any setpoint from outside the unit is remote. The standard setpoint* is an internal potentiometer. To enable remote setpoint and disable the internal potentiometer certain solder jumpers must be open and closed.

Setpoints	Open	Closed
Potentiometer (external)	SB1, SB2, SB3, SB4	—
0 to 1V	SB1, SB2, SB3, SB4	—
0 to 10V	SB1, SB2, SB3	SB4
1 to 5V	SB2, SB3,	SB1, SB4
4 to 20mA	SB2	SB1, SB3, SB4

* Standard jumper settings are: SB1, SB3 and SB4 are open and SB2 is closed for limit alarm 1.

Latching

Latching describes an alarm state which, once tripped, remains tripped (latched) until manually reset. Solder jumper SB6 controls latching; closing SB6 implements latching, opening it (its normal state) turns latching off.

24 Volt Relay Drive Output

For certain applications (e.g., controlling a pilot relay which drives a larger motor or using solid state relays) this option is useful. Use of this configuration disables relay contacts.

Relay Status	Open	Closed
Disenabled (internal relays)	SB14, SB15	SB16
Enabled (24V relay drives)	SB16	SB14, SB15

Deadband

"Deadband" describes an area within the normal activation area of the established trip and untrip points which is inactive, or "dead." Typically, it is used in situations (e.g. filling a tank with fluid) where oscillation effects falsely trigger the on and/or off alarms. Deadband desensitizes your system, within selectable limits.

Deadband is set using the procedure described in Calibration, below.

Calibration

Initial Calibration

1. Set input to minimum
2. Set deadband to minimum (turn counterclockwise)
3. Set limit alarm setpoint adjustment to minimum (turn counterclockwise)
4. Adjust input zero just until limit alarm trips
5. Set input to maximum
6. Set limit alarm setpoint adjustment to maximum (turn clockwise)
7. Adjust input span just until limit alarm trips

Initial Calibration (with transmitters)

1. Set input to minimum
2. Adjust process transmitter output for 0.000 Volts using the zero potentiometer
3. Set input to maximum
4. Adjust process transmitter output for 1.000 Volts using the input span potentiometer

Setpoint and Deadband Calibration

1. Input the desired trip point
2. Set deadband to minimum
3. Adjust setpoint just until limit alarm trips
4. Adjust deadband potentiometer until the relay stops chattering or adjust the deadband until the desired deadband is reached (if using latching, leave deadband at minimum)

If you want to set deadband to a specific percentage:

- a. Set deadband to maximum (turn clockwise)
- b. Set the input to the desired untrip point (be certain that the limit alarm is in a tripped state)
- c. Adjust deadband slowly counterclockwise until the limit alarm trips

Setpoint and Deadband Calibration (with transmitters)

1. Set the setpoint transmitter output to the desired setpoint
2. Adjust the deadband as described above