DESCRIPTION
The Model Series 380A Signal Alarm Module accepts two, 1 to 5 Vdc input signals and provides outputs in the form of SPDT relay contacts; one relay for each input.

The module can be used to provide single alarms for two, independent input signals, or a dual trip-point alarm for one input signal.

Current input signals are accommodated by placing precision resistors across the input terminals in the Card Cage Enclosure. This permits removal of the module without breaking the input current loop.

Basically, these are two types of Signal Alarm Modules: one with blind trip-point adjustments, and the other with graduated dials for the trip-points. The modules are also available with standard or hermetically sealed relays (See MODEL DESIGNATION).

LED’s at the front of the module indicate that the output relays are energized. An illuminated LED indicates an energized relay.

Each trip-point is provided with a 1 to 10% dead-band adjustment for noisy input signals.

MODEL DESIGNATION

<table>
<thead>
<tr>
<th>Model Series</th>
<th>3 8 0 A 3</th>
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<tbody>
<tr>
<td>Signal Alarm Module</td>
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</table>

Options

1—None, standard relay, blind trip points
2—Hermetically sealed relay, blind trip-points
3—Standard relay, graduated dial trip-points
4—Hermetically sealed relay, graduated dial trip-points

SPECIFICATIONS

Input

<table>
<thead>
<tr>
<th>Standard</th>
<th>1-5 Vdc, Overrange protection to 40 Vdc</th>
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<tbody>
<tr>
<td>Alternate</td>
<td>(With optional signal conditioning resistors) 1 to 5 mA, 2 to 10 mA, 10 to 20 mA, 50 mA</td>
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Output

| Two SPDT relays; contacts rated at 2 amps, 117 Vac resistive |

Trip Adjustment

| 0-110% of span |

Deadband Adjustment

| 1-10% of span |

Relay Operation

| Reversible |

Accuracy

Repeatability within ±0.1% of span

RELAY ACTION

Determine if the application for the module requires NORMAL or REVERSE relay action. Set the action before installing the module in the Card Cage Enclosure. As shipped, the module is set for NORMAL relay action.

NORMAL refers to a relay that is energized when the input signal is above the trip-point.

REVERSE refers to a relay that is energized when the input signal is below the trip-point.

The Normal/Reverse selection is made by positioning plug-in jumpers: refer to the component location drawing and schematic. Early modules employed jumpers soldered on the foil side of the circuit board.

INSTALLATION

The Signal Alarm Module must be installed in the Card Cage Enclosure. It can be plugged into any of the numbered slots in the enclosure. Refer to your drawings for the designated slot, or choose a slot for the module.

The safety keys in the Card Cage Enclosure must be set before the module is plugged in. Service Instructions SD3801 identifies these safety keys and gives the procedure for setting them. The positions of the keys for the Alarm Module are as follows:

Left Key: V (vertical) Right Key: H (horizontal)

Input and output wiring connections are made on the terminal strips in the Card Cage Enclosure. There is a terminal strip for each module slot; the terminal strips are numbered to correspond to the slot numbers. Signal conditioning resistors for milliampere inputs are identified in Service Instructions SD3801. Refer to the Connection Diagram in this instruction and to the Service Instructions SD3801.

CALIBRATION

1. Connect the Signal Alarm Module as shown in the Connection Diagram.
2. Set the DEADBAND adjustments to their minimum setting (fully counterclockwise).
3. Determine the input signal values for the alarm points and apply these signals to the input terminals.
4. Adjust each TRIP-SET potentiometer until its output relay operates. LED’s at the front of the module will be illuminated when the output relays are energized.
5. If the input signal in the field has noise or jitter on it, it may be necessary to increase the deadband setting slightly to reduce relay chatter. If the deadband setting is changed, it may alter the trip-point setting slightly.

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MAINTENANCE
Except for annual cleaning and periodic calibration checks, the module requires no routine maintenance.

If the module does not operate properly when initially installed, check the input and output circuit wiring. Most problems on new installations can be traced to wiring mistakes. Also, verify that the equipment associated with the input and output circuits is functioning and properly calibrated.

If a problem is traced to the module, remove the module and give it a full bench check.

A PIN 15378-27 Card Extender can be ordered. This extender provides test jacks for all of the card-edge connections on the module. It also provides access to a module’s circuit board for detailed troubleshooting.

RECOMMENDED SPARES
There are no recommended spare parts for the Signal Alarm Module.
One spare module is recommended for every 1 to 10 in service.

Terminal strip on Series 380 rack enclosures.

CONNECTION DIAGRAM
NOTES:
1. For dual alarm on a single input, jumper Terminals 1 and 2 together.
2. The COMMON input terminal is common with the Card Cage Enclosure’s DC power supply common.
3. 1 to 5 Vdc input signals are standard. For milliampere inputs, refer to Service Instructions SD3801 for the required input conditioning resistors.
4. Relay contact load limitations are listed under “Output” of the SPECIFICATIONS section.
5. Contacts are shown with output relays de-energized. Relays set for “normal” (N) action are de-energized when the input is below the trip-point. Relays set for “reverse” (R) action are energized when the input is below the trip-point.