DESCRIPTION
Model Series 380AW Alarm Modules accept a slide-
wire input signal and provide relay actuation at a
pre-set input signal level. The alarm module can be
supplied with up to two output relays with separate
trip-point and deadband adjustments. The trip-point
adjustments have very high resolution by utilizing 22
turn potentiometers. Deadband adjustments are pro-
vided by 15 turn potentiometers. The relay outputs
are single pole double throw contacts rated at 2A
(117 VAC or 28V dc) with a resistive load. Alarm
modules using hermetically sealed relays are available.
The input circuit is electrically isolated from the power
supply allowing the input to operate at common mode
voltages of up to 100V dc. Input filtering is provided
to minimize the effects of noise on the input signal.
Relay actuation can be converted from “normal” acting
(relay energized above trip-point) to “reverse” acting
(relay energized below trip-point) by cutting a jumper
on the circuit board. This provides selectable fail safe
action.
An L.E.D. is provided at the front of the circuit card
(one for each relay) to provide visual indication when
an output relay is energized.

MODEL DESIGNATION

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Basic Series Designation
Designates SlideWire Alarm Module
Indicates Type of Output Relay
1 - Standard Relay (SPDT, 2A)
2 - Hermetically Sealed Relay
   (SPDT, 3A)
Indicates Number of Trip-Points
1 - Single Trip-Point (1 Relay)
2 - Dual Trip-Points (2 Relays)
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SPECIFICATIONS

INPUT
Slidewire Resistance:........ 100 to 5000 Ohms
Excitation Voltage
   (Internal):.............. 20 mV dc (nominal)
Input Impedance:........... 200,000 Ohms (min.)
Noise Rejection:........... Common Mode: 140 db @
                          60 Hz
                          Normal Mode: 40 db @
                          60 Hz
Isolation:.................. Up to 100 Vdc above ground
Overload (Without
   Damage):................ ± 10 Volts (maximum)

OUTPUT
Standard Relay(s):........... SPDT Contacts,
   Max Resistive Load:
   2A @ 117 Vac or
   28 Vdc, 100 mA @ 125 Vdc.
Hermetically Sealed
   Relay(s):................. SPDT Contacts,
   Max. Resistive Load:
   3A 117 Vac or 24 Vdc.

ADJUSTMENTS (For Each Relay)
Trip Point:.................. 0 to 100% of slidewire posi-
                          tion (22 turn trimpot)
Deadband:................... 0.1 to 25% of slidewire posi-
                          tion (15 turn trimpot)
Relay Operation:............ Normal: Relay energized
                          above trip point (Jumper
                          Wire Intact)
                          Reverse: Relay energized
                          below trip point (Jumper
                          Wire Removed).

REPEATABILITY:............... ± 0.1 of span @ constant
                          conditions.
RESPONSE TIME:.............. 300 milliseconds
OPERATING TEMP.:........... 32 to 122°F (0 to 50°C)

MOORE PRODUCTS CO., Spring House, Pa. 19477
INSTALLATION
The Alarm Module must be installed in a Model Series 380 Card Cage Enclosure. It can be plugged into any of the slots in the enclosure. Refer to customer drawings for the designated slot or assign a convenient slot for it.

The safety keys of the designated slot in the card cage enclosure must be set before the module can be plugged in. Service Instruction SD3801 identifies these safety keys and gives the procedure for setting them. The positions of the keys for the Slidewire Alarm Module are as follows:

Left Key: V (Vertical)
Right Key: H (Horizontal)

The input and output connections are made to the terminal strips provided at the front or the rear of the card cage enclosure (depending on model). Each terminal strip is identified with a number that matches a corresponding slot number. Refer to the Connection Diagram (Figure 1) in this Instruction and to Service Instruction SD3801.

WARNING
Ensure that power is OFF on all wires to be connected.

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CALIBRATION
The Slidewire Alarm Module is normally shipped factory calibrated for a specific customer application.

To assure continued accuracy, it is recommended to check the calibration after the first 30 days of operation and then at regular intervals dictated by the severity of the operating environment or whenever an inaccuracy is suspected.

Use the following procedure to perform periodic calibration checks or to calibrate the Module for a totally new application. Figure 2 shows the location of all jumper wires and trimpots.

1. Select the required relay operating mode. In NORMAL mode, the relay is energized when the input signal shifts above the trip point. In the REVERSE mode, the relay is energized when the input signal remains below the trip point and is de-energized when it shifts above the trip point or when power is discontinued. In some applications, it may be desirable to use the inherently fail-safe REVERSE operating mode.

<table>
<thead>
<tr>
<th>RELAY OPERATING MODE</th>
<th>RELAY K1 WIRE JUMPER</th>
<th>RELAY K2* WIRE JUMPER</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL</td>
<td>IN</td>
<td>IN</td>
</tr>
<tr>
<td>REVERSE</td>
<td>OUT</td>
<td>OUT</td>
</tr>
</tbody>
</table>

* Not present in single relay models.

2. Connect the slidewire to appropriate terminals on the card cage. Refer to the Connection Diagram, Figure 1.

3. Set the deadband (DB) trimpot to minimum (fully counterclockwise), then turn two (2) turns clockwise to provide a 0.1% deadband.

4. Set the slidewire to the desired trip point position.

5. Adjust the TRIP trimpot until the relay changes state. Observe the associated LED indicator and rock the trimpot screw CW and CCW to come as close as possible to the trip point.

6. If wider deadband is required, advance the DB trimpot clockwise, a small amount at a time. After each adjustment, check the pull-in and drop-out points by varying the slidewire position. Continue adjustment and checking until the desired deadband is obtained.

7. Readjust the TRIP trimpot to obtain the desired trip point operation as the slidewire is varied.

NOTE
Whenever the deadband adjustment is changed, the Module’s trip point must again be checked and if necessary readjusted.

8. Repeat steps 3 through 7 for the second relay, if applicable.
FIGURE 2 P. C. Board
MAINTENANCE

GENERAL

Required maintenance for this module should consist of periodic cleaning, visual inspection, and calibration checks. The severity of the environment in which the module is located will determine the required frequency of maintenance.

CLEANING

The module should be cleaned as often as operating conditions require. The accumulation of dust and dirt on components prevents efficient heat dissipation which can cause overheating and component breakdown.

Blow off accumulated dust and dirt with dry, low velocity air. Any dust or dirt that remains should be removed with a soft brush or cloth dampened with a mild detergent and water solution. Cotton-tipped swabs are useful for cleaning in narrow spaces.

CAUTION

Avoid the use of chemical agents which may damage plastic components or protective coatings.

VISUAL INSPECTION

The module should be inspected occasionally for defects such as loose or broken connections, damaged circuit board, and heat-damaged components.

The corrective action for most visible defects is obvious. However, if a heat-damaged component is found, the cause of overheating must be corrected to prevent a recurrence of the damage.

CAUTION

Exceeding the specified ambient temperature limits can adversely affect performance and may cause damage.

TROUBLESHOOTING

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

If the trouble is traced to the module, remove the module and give it a full bench check. A complete schematic of the module is given in Figure 3.

A Part No. 15378-27 Card Extender can be ordered. It extends the module beyond the front edge of the card cage enclosure, providing easy access to both sides of the module's circuit board.

IMPORTANT

Warranty repair and replacement requires the module to be returned to Moore Products Co., Spring House, Pa. 19477. The warranty is null and void if repair is attempted at any other location.

RECOMMENDED SPARES

There are no recommended spare parts for the Slide-wire Alarm Module.

One spare module is recommended for every 1 to 10 in service.
FIGURE 3 Schematic

NOTES:
1. ALL RESISTORS 1/4W 10% UNLESS OTHERWISE SPECIFIED.
2. ALL DIODES ARE ACROMAG 100V-1/3 UNLESS OTHERWISE SPECIFIED.
3. ALL SEVEN DIGIT NUMBERS ARE ACROMAG PART NUMBERS.
4. ALL PARTS MARKED WITH * ARE NOT INSTALLED ON SINGLE RELAY MODELS.
5. THESE JUMPERS INSTALLED ON SINGLE RELAY MODELS ONLY.
6. R12 and R16 are replaced with jumpers on models with hermatically sealed relays.

<table>
<thead>
<tr>
<th>JUMPER OPTIONS</th>
<th>J3</th>
<th>J4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay Operation</td>
<td>K1</td>
<td>K2</td>
</tr>
<tr>
<td>Normal</td>
<td>Fy</td>
<td>Fy</td>
</tr>
<tr>
<td>(Fy energized - signal above trip)</td>
<td>In</td>
<td>In</td>
</tr>
<tr>
<td>Reverse</td>
<td>Ou</td>
<td>Ou</td>
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<table>
<thead>
<tr>
<th>TABLE 3 SINGLE OR DUAL OPTIONS (See Notes 4 &amp; 5)</th>
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<tbody>
<tr>
<td>STANDARD</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>T1</td>
</tr>
<tr>
<td>R5</td>
</tr>
<tr>
<td>R6</td>
</tr>
<tr>
<td>R7</td>
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<tr>
<td>C4</td>
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<td>R55</td>
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+24V, +15V, COMMON