Seekirk, Inc.

A1600
Window Annunciator
Installation
Instruction
Manual

User Manual Version 1.0 Latest Revision 27-May-09

Product Warranty:

Seekirk, Inc. warrants that the apparatus delivered will be of kind and quality described in the order of contract. In connection with the apparatus sold, Seekirk agrees to correct any defect(s) in workmanship or material, which may develop under proper or normal use during the period of one year from the date of shipment, by repair or by replacements of the defective part(s), freight paid by customer both ways; and such correction shall constitute a fulfillment of all Seekirk liabilities in respect to said apparatus. In no event shall Seekirk be liable for consequential damages.

Proprietary Notice:

Technical Support:

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Unpacking and Handling

Immediately upon receipt of the unit, the packing list should be examined to assure that the unit received corresponds with the system ordered as well as inspecting for any parts shortage. Examine the unit for any physical damage, paying particular attention to the following:

1) Examine the enclosure for any concealed damages. The painted surfaces should be free of marks and scratches.
2) Insure that all terminal barrier strips screws should be properly secured.
3) Insure that all plug-in components such as relays and printed circuit boards are properly seated.
4) Insure that the unit is free of all restraining (i.e. tape) and loose packing material before power is applied.

If any evidence of physical damage due to improper handling by the carrier is noted, then, if possible, save both the shipping box and packing material for use in returning the unit back to the factory and then notify the carrier on how to file a claim. Seekirk Inc. should be notified as to the specific equipment and the nature and extent of damage. Include as much information as possible, such as your purchase order number, Seekirk's internal SOR number, model number, and serial number. Such information should appear on the packing list. Any claim for shortage, defects, or errors in shipment must be made in writing within **10 days of receipt**.

WARNING:

When handling any of the A1600 printed circuit boards, precautions must be taken to ensure the working area is suitable for handling electrostatic sensitive devices.

Wiring Hookup and Startup Procedure

CAUTION:

The following procedures are for functional operation only. Under no circumstances are voltage breakdown tests or insulation resistance tests to be performed without first consulting the factory. Such tests may result in serious component damage due to the effects of stray capacitive coupling, unless proper procedures are followed.

DANGER:

VOLTAGES DANGEROUS TO LIFE ARE PRESENT WHEN POWER IS APPLIED TO THE UNIT.

1) C***onnect External Pushbutton Controls.*** The TEST, ACK, and RESET controls may be wired for remote access. Refer to figure 2 wiring diagram.
   NOTE: To reduce the effects of any induced external electrical noise into the controls, it is recommended to twist wire pair the control wiring.

2) ***Connect Input Power Wiring to the Annunciator.*** Connect power source cable to terminal strip (**TB3**) labeled "**INPUT POWER,"** which is located on the terminal board at the rear of the unit.

a) If the input power source is a DC voltage then insure proper polarity is observed during hookup.
b) Re-inspect the power hookup wiring connections and also insure that the voltage rating selected for the unit matches the voltage rating of the applied source voltage before applying power to the unit. The input voltage rating for the unit can be found on the model/serial number label located on the side of the unit.

3) ***Apply Power.*** If any display windows are illuminated then press the ACK and RESET control pushbuttons to extinguish the displays.

4) ***Annunciator Test.*** Referring to table 1 (alarm sequencing chart), operate the control pushbuttons in the following sequences.

a) TEST - All illuminated displays shall flash and the main alarm relay contacts change state.
b) ACK - Depending on the alarm sequence specified by the customer. The illuminated displays shall either extinguish, remain on, or a change in flash rate. The main alarm relay returns to the normally de-energize contact state.
c) RESET – This control pushbutton is not present for sequences not requiring reset. All illuminated displays shall extinguish.

4) ***Remove Power.***

5) C***onnect Field Contact Wiring to the Annunciator.*** Wiring of the field contact input allows the triggering of an alarm event at the unit.
a) The terminal on the terminal board, located on the rear panel of the annunciator, labeled "**FC COM**" (**F**ield **C**ontact **COM**mon voltage) is the source or excitation voltage which can be wired to one side of the field contact switch of the device to be monitored. The other side of the field contact switch is wired to one of terminals labeled "**F.C. A,**" "**F.C. B,**" "**F.C. C,**" or "**F.C. D.**"
Figure 1 provides the definition of the labels associated to the wire connection terminals.
WARNING: **DO NOT** connect any of the **FC COM** terminals to the **0V** terminal.

6) C***onnect Auxiliary and Main Alarm Relay Wiring to the Annunciator.*** Refer to figure 1 for the auxiliary and main alarm relay wiring terminal locations. The wiring terminals for the auxiliary relays are located on the rear panel of the annunciator and are labeled as "POINT A/B/C/D AUX RLY". The wiring terminal for the main alarm relay contacts are located at the lower left corner of the annunciator as viewed from the rear. The terminal is labeled "ALARM CONTACTS."

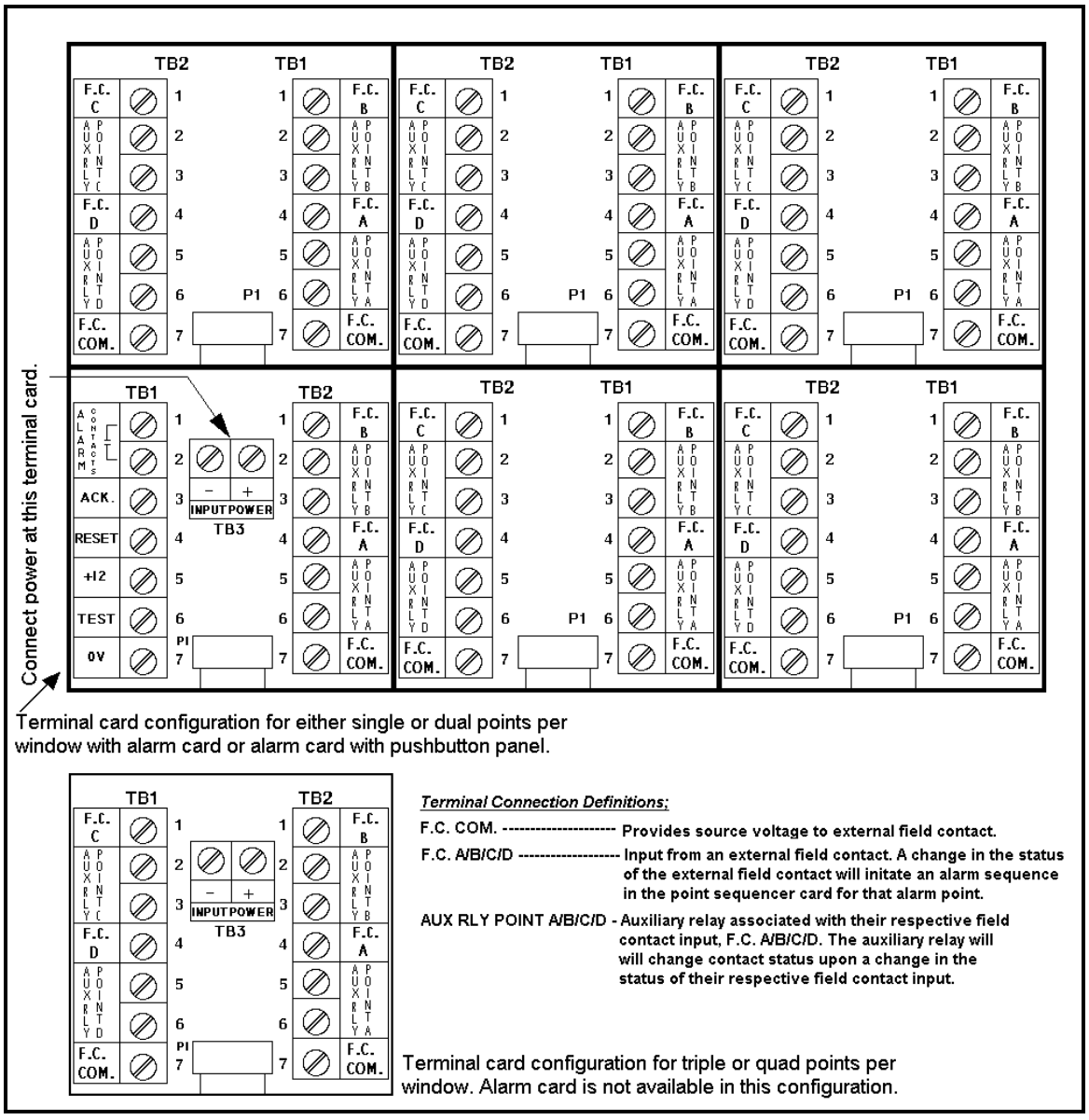


Figure 1 - Rear Panel View, Wiring Terminal Definition

Figure 2 provides a wiring hookup example. It should be noted, the field input (F.C. A-D), all auxiliary relays contacts, and main alarm relay contacts are configurable for either normally open (N.O.) or normally closed (N.C.) via jumper selectors on the point cards and the alarm relay card.

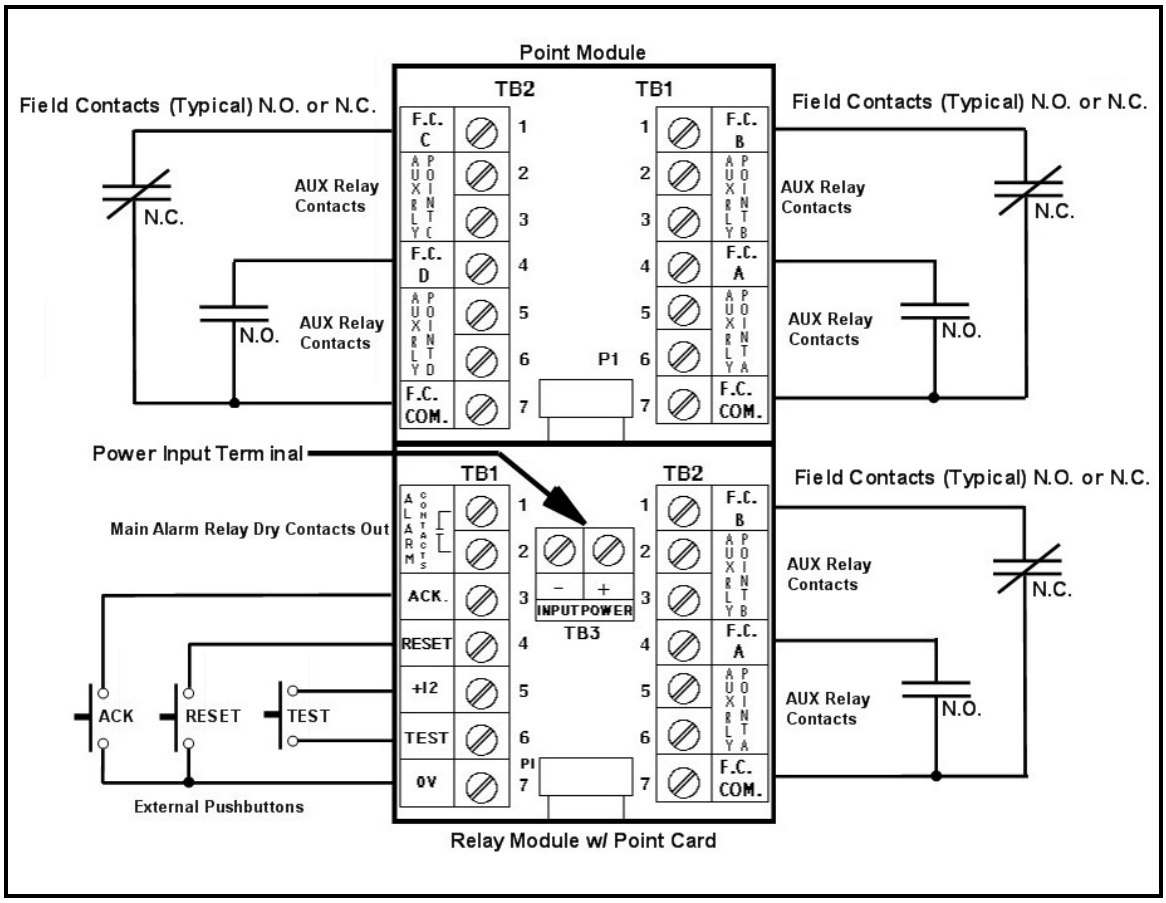


Figure 2 - Rear Panel View of Terminal Connections (Example)

Description of Circuit Cards

Internal Arrangement of Primary Circuit Cards:

Refer to figures 1 and 8 for detailed information on the location of the circuit cards within the A1600 unit.

Card Insertion Location:

1) **Point card** is inserted at the center position connector within the module. Although the connector is slightly off center, it is still possible to insert the card incorrectly. When inserting the point card insure to note the direction of the components as shown in figure 1.
2) **Power supply card** is inserted at the left most matching female connector within the module. Since the power supply card location varies to the unit configuration specified by the customer. Refer to the accompanying drawing/s supplied with the unit for the location of the power supplies.
3) **Alarm relay card** is located at the lower right most position of the unit as viewed from the front. The alarm relay card is inserted at the right most connector within the module

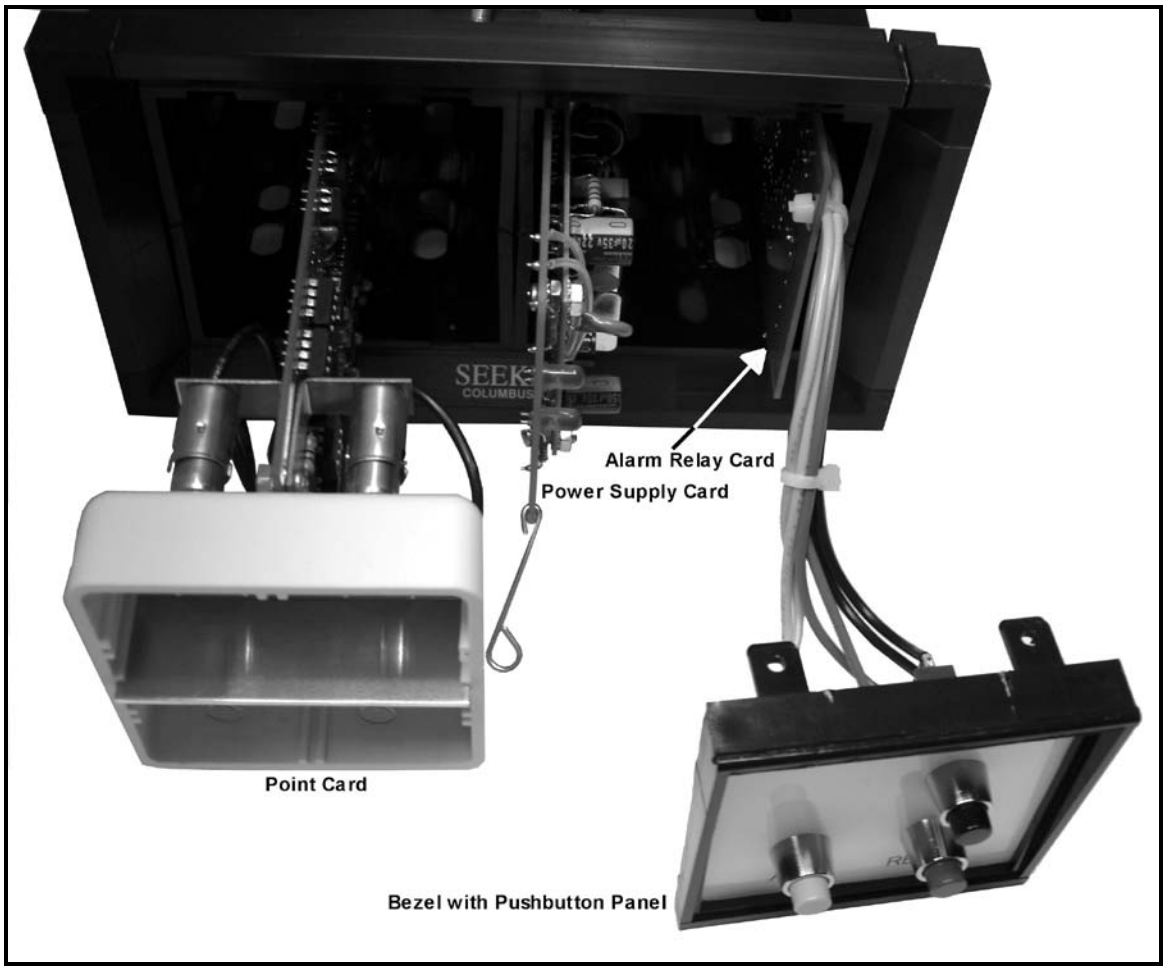


Figure 3 – Internal Circuit Card Arrangements

Point Logic Card:

Description:
The point logic card provides the alarm sequencing, lamp illumination, and auxiliary and main alarm relay contact controls.

Configuration Jumper or Dip Switch Selectors:
Figures 4 (board version 1.2 and earlier) and 5 (board version 2.0 or later) shows the configuration jumper/dip switch selectors for N.O. or N.C. selections for both the F.C. input, and auxiliary relay contacts on a per point basis.
All point cards are capable of providing the system lamp flash rate. However, only the point card in the upper left corner of the unit, as view from the front, is designated to provide the lamp flash rate. Only the designated point card shall have the jumper labeled “Flash Rate” in the “ON” position, for all other point cards this jumper shall be in the “OFF” position.
The “Point Mode” jumper/dip switch selection is used to modify the operating parameters on a per point basis. For board version 2.0 or later only, the “Point Mode” selector will allow the selection of either the auxiliary relay contact to follow the F.C. input or to latch the auxiliary relay contact until acknowledge. This selection is standard for most alarm sequences.

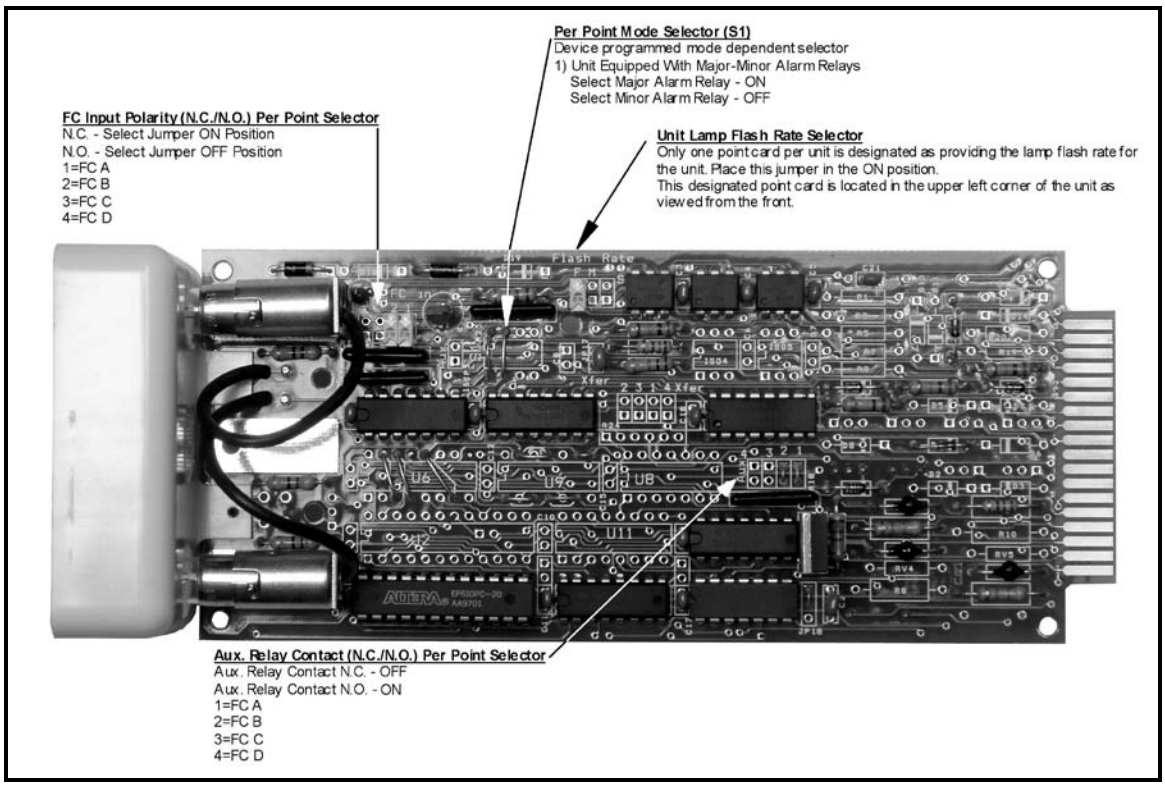


Figure 4 – Point Card Jumper Selectors

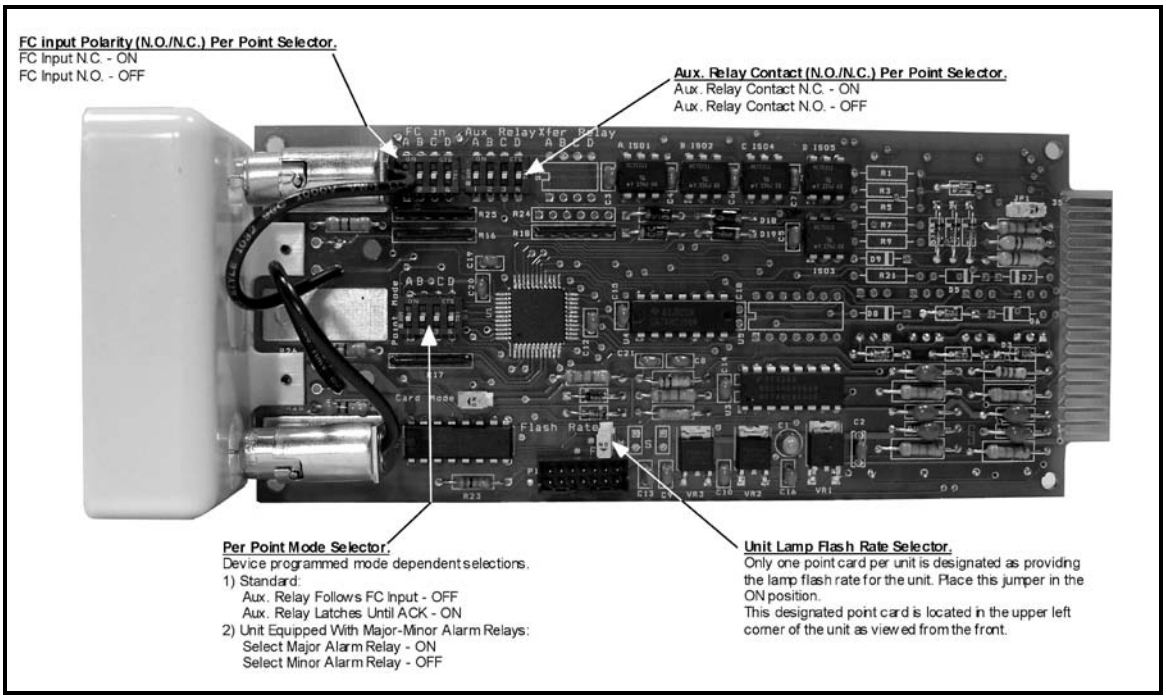


Figure 5 – Point Card Jumper Selectors

A1600 Standard Alarm Sequencing:
The following table provides the sequence of events for standard alarm sequence types.

STANDARD POINT LOGIC CARD SEQUENCES

SEQUENCE OF EVENTS I OCCURS WHEN FIELD CONTACTS RETURN TO NORMAL AFTER "ACK" [1]
SEQUENCE OF EVENTS II OCCURS WHEN FIELD CONTACTS RETURN TO NORMAL BEFORE "ACK" [1]

SEQUENCE OF EVENTS I → 1 → 2 → 3 → 4 → 5 → 6
SEQUENCE OF EVENTS II → 1 → 2 → 3 → 4 → 5 → 6

POINT CARD SEQUENCE TYPE OUR LTR	POINT CARD SEQUENCE TYPE NEW ISA	SIGNAL DEVICE	FIELD CONTACTS STATUS NORMAL	FIELD CONTACTS STATUS ALARM	PUSHBUTTON OPERATION "ACK"	FIELD CONTACTS STATUS RET TO NORM AFTER "ACK"	FIELD CONTACTS STATUS RET TO NORM BEFORE "ACK"	PUSHBUTTON OPERATION "ACK"	PUSHBUTTON OPERATION "RESET"	PUSHBUTTON OPERATION 1ST OUT "RESET"
D	(A)	VISUAL AUDIBLE	OFF OFF	FLASH ON	ON OFF	OFF OFF	FLASH ON	OFF OFF	NA NA	NA NA
E	(A-5)	VISUAL AUDIBLE	OFF OFF	ON ON	ON OFF	OFF OFF	ON ON	OFF OFF	NA NA	NA NA
F	(A-4)	VISUAL AUDIBLE	OFF OFF	FLASH ON	ON OFF	OFF OFF	OFF OFF	OFF OFF	NA NA	NA NA
G	(A-4-5)	VISUAL AUDIBLE	OFF OFF	ON ON	ON OFF	OFF OFF	OFF OFF	OFF OFF	NA NA	NA NA
H	(A-13)	VISUAL AUDIBLE	DIM OFF	FLASH ON	ON OFF	DIM OFF	FLASH ON	DIM OFF	NA NA	NA NA
J	(R-8)	VISUAL AUDIBLE	OFF OFF	FLASH ON	ON OFF	DIM FLASH ON	FLASH ON	OFF OFF	NA NA	NA NA
K	(M)	VISUAL AUDIBLE	OFF OFF	FLASH ON	ON OFF	ON OFF	FLASH ON	ON OFF	OFF OFF	NA NA
L	(M-5)	VISUAL AUDIBLE	OFF OFF	ON ON	ON OFF	ON OFF	ON ON	ON OFF	OFF OFF	NA NA
M	(A-8-12)	VISUAL AUDIBLE	OFF OFF	FLASH ON	ON OFF	OFF BEEP	FLASH ON	OFF OFF	NA NA	NA NA
N	(F2A)	1ST VISUAL SUB. VISUAL AUDIBLE	OFF OFF OFF	FLASH ON ON	ON ON OFF	OFF OFF OFF	FLASH ON ON	OFF OFF OFF	NA NA NA	NA NA NA
P	(F2M)	1ST VISUAL SUB. VISUAL AUDIBLE	OFF OFF OFF	FLASH ON ON	ON ON OFF	ON ON OFF	FLASH ON ON	ON ON OFF	OFF OFF OFF	NA NA NA
Q		VISUAL AUDIBLE	OFF OFF	FAST FLASH ON	ON OFF	OFF OFF	SLOW FLASH ON	OFF OFF	NA NA	NA NA
R	(R)	VISUAL AUDIBLE	OFF OFF	FAST FLASH ON	ON OFF	SLOW FLASH ON	FAST FLASH ON	ON OFF	OFF OFF	NA NA
S	(F3A)	1ST VISUAL SUB. VISUAL AUDIBLE	OFF OFF OFF	FAST FLASH SLOW FLASH ON	ON ON OFF	OFF OFF OFF	FAST FLASH SLOW FLASH ON	OFF OFF OFF	NA NA NA	NA NA NA
T	(F3M)	1ST VISUAL SUB. VISUAL AUDIBLE	OFF OFF OFF	FAST FLASH SLOW FLASH ON	ON ON OFF	ON ON OFF	FAST FLASH SLOW FLASH ON	ON ON OFF	OFF OFF OFF	NA NA NA
[2] U		1ST VISUAL SUB. VISUAL AUDIBLE	OFF OFF OFF	FAST FLASH SLOW FLASH ON	FAST FLASH ON OFF	FAST FLASH ON OFF	FAST FLASH SLOW FLASH ON	FAST FLASH ON OFF	FAST FLASH OFF OFF	OFF OFF OFF
[3] V	(F3A-3)	1ST VISUAL SUB. VISUAL AUDIBLE	OFF OFF OFF	INT. FAST FL. FAST FLASH ON	SLOW FLASH ON OFF	SLOW FLASH OFF OFF	INT. FAST FL. FAST FLASH ON	SLOW FLASH OFF OFF	NA NA NA	OFF OFF OFF
[3] W	(F3M-3)	1ST VISUAL SUB. VISUAL AUDIBLE	OFF OFF OFF	INT. FAST FL. FAST FLASH ON	SLOW FLASH ON OFF	SLOW FLASH OFF OFF	INT. FAST FL. FAST FLASH ON	SLOW FLASH ON OFF	SLOW FLASH OFF OFF	OFF OFF OFF

[1] NOTE 1: STEP 5 OR 6 IN EITHER SEQUENCE OF EVENTS I OR II ARE NOT APPLICABLE (NA) WHERE SPECIFIED.

[2] NOTE 2: AT ANY TIME DURING THE SEQUENCE OF EVENTS, OPERATION OF THE 1ST OUT RESET WILL CAUSE THE 1ST VISUAL TO REVERT TO THE SUBSEQUENT STATE.

[3] NOTE 3: "INT. FAST FL." MEANS INTERMITTENT FAST FLASH.

Table 1 – Alarm Sequence Chart

Power Supply Card:

Description:
The power supply card provides 24 VDC and 12 VDC for use within the unit.

Power Supply Types:
Figures 7 displays the various types of power supplies used as required by the customer specified input supply voltage.
The 24 and 48 VDC power supplies are protected from accidental input supply over-voltage. If an over-voltage condition is encounter, disconnect the power supplied to the unit and allow the unit to remain disconnected for a time period greater then one minute to allow the power supplies' resettable fuses to recover before connecting the correct input supply voltage to the unit.

Internal Arrangements of Power Supplies:
For one, two, and four alarm points per point card, the power supplies are arranged in groups of three point cards per power supply. For three alarm point per point card, the power supplies are arranged in groups of two point cards per power supply. Refer to the drawing/s supplied with the unit to locate the positions of the power supplies distributed through out the unit.

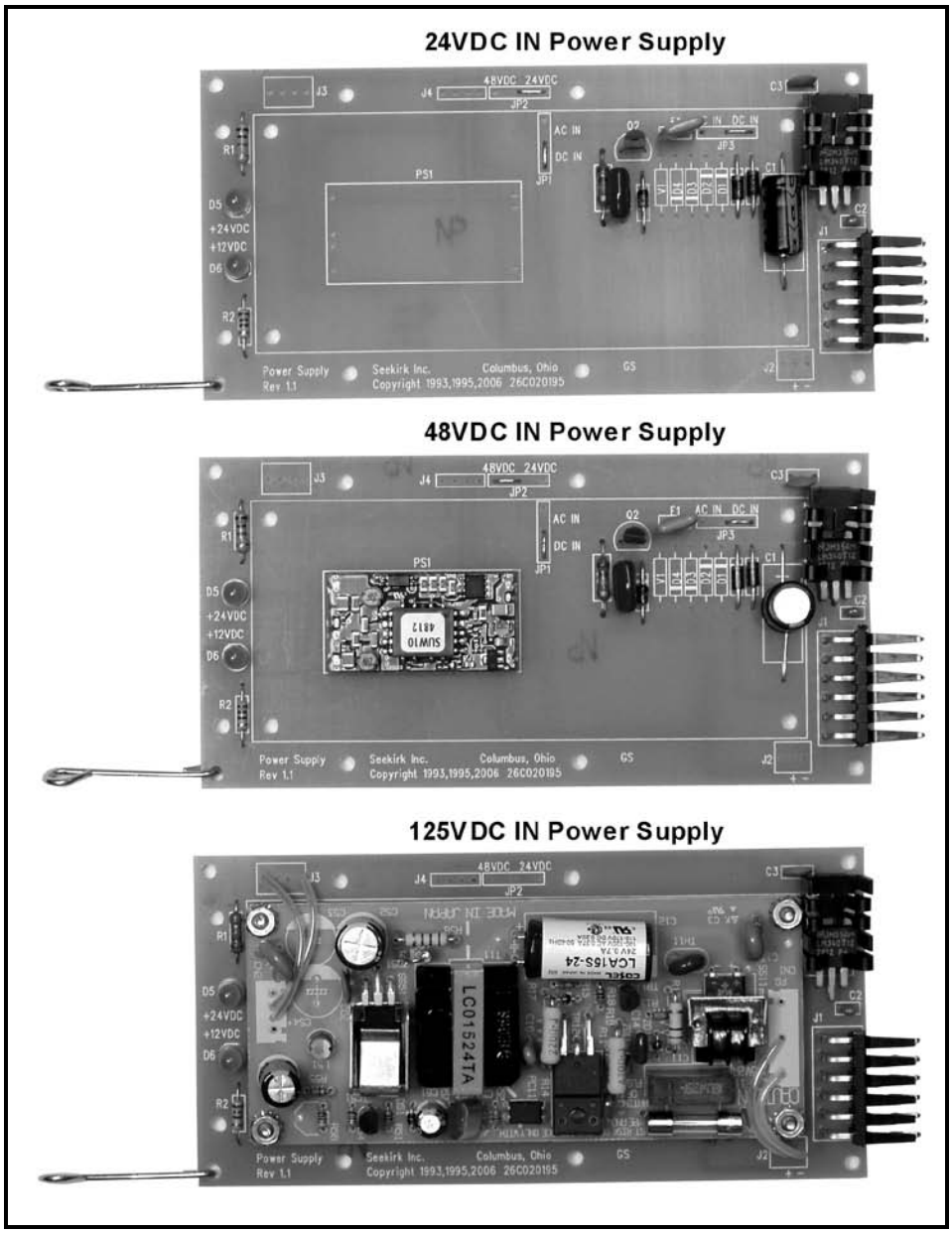


Figure 6 – Power Supplies Types

Switch Interface/Alarm Relay Card:

Description:
Interfaces the front panel switch controls (TEST, ACK, and RESET) to the point cards as well as provide the main alarm relay contact for an external device.

Alarm Relay N.O./N.C. Selection:
Referring to figure 7, to select the polarity of the main alarm relay contact, locate the jumper labeled JP1 on the "Alarm/Panel Interface Card." Jumper JP1 consist of the labels "NC" and "NO" which refer to normally closed and normally open respectively in the non-alarm condition.
This jumper is the wire jumper soldered on the printed circuit board and will require soldering tools to change the polarity of the main alarm relay contact. For example to change the relay contact from NO to NC requires de-soldering the wire jumper and re-soldering the wire jumper at the solder pad labeled NC to the center solder pad of JP1.

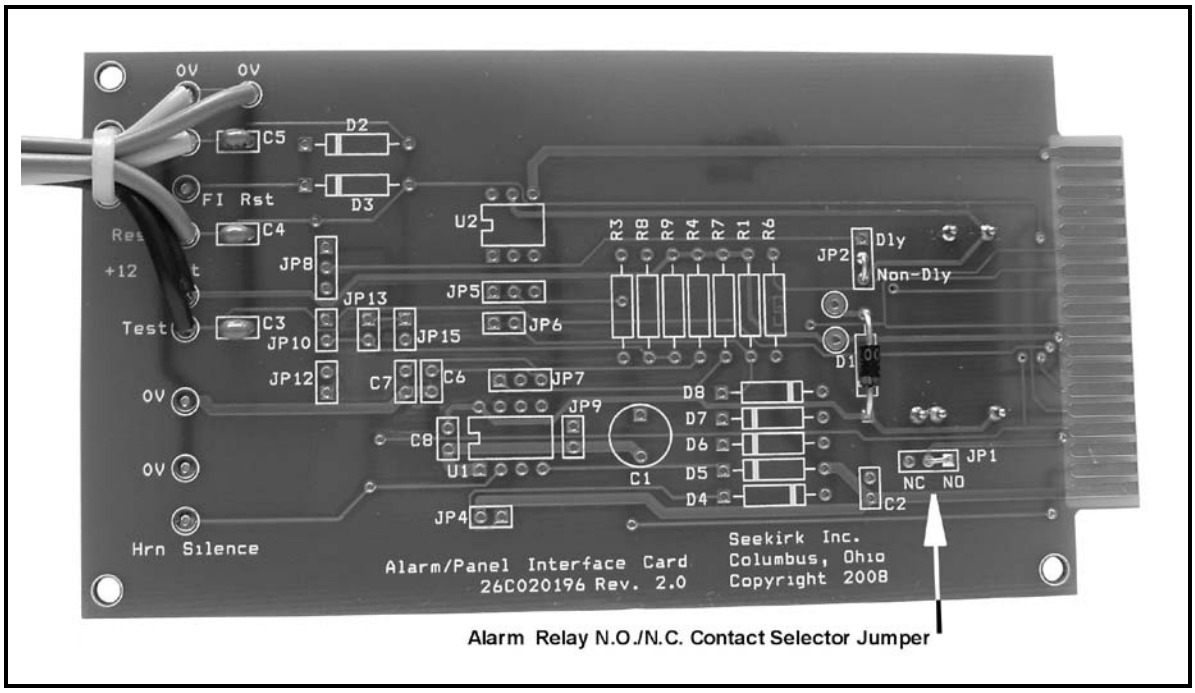


Figure 7 – Alarm Relay Card

Electrical Specifications

AC Power:
Voltage input range- 110 or 220 VAC.

DC Power:
Voltage input range- 24, 48, or 125 VDC.

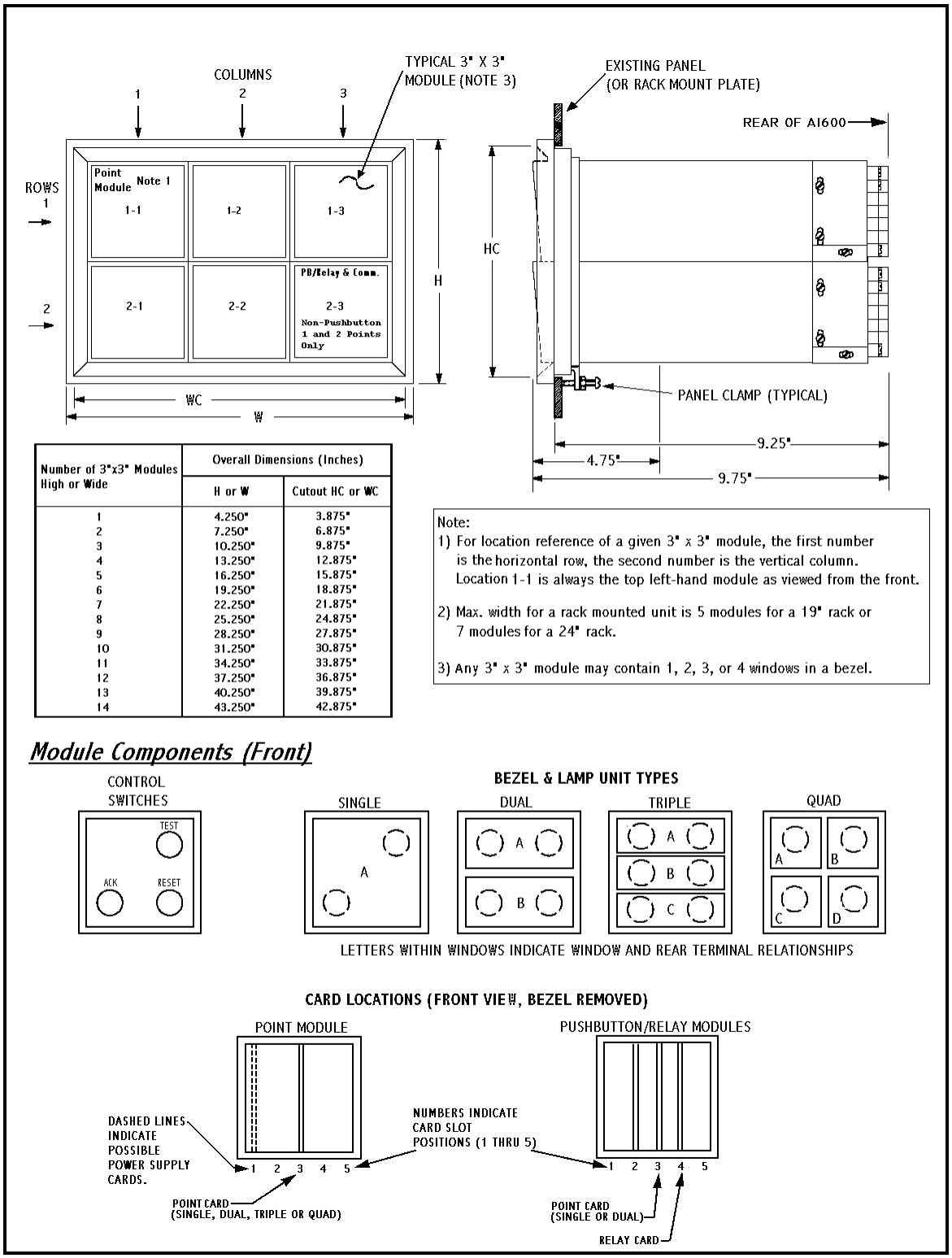
Field Contact Input:
Input voltage range- 24 to 125 VDC or VAC. Jumper/DIP switch selectable for either NO or NC field contact input.
Optocoupler rating- Minimum of 2500 VAC Withstand Test Insulation.
Input protection- Metal Oxide Varistor. Max. clamping voltage 360 Volts @ 2.0 Amps during a current pulse of 8/20 uSec.

Auxiliary Relay Ratings:
Max. switching voltage- 200 VDC.
Max. switching current- 1.0Amps.
Max. power rating- 10 VA.
Relay type- SPST. Jumper/DIP switch selectable for either NO or NC.

Alarm Relay Ratings:
Max. switching current- 2.0 Amps @ 28 VDC. 1.0Amp @ 120 VAC.
Relay type- SPDT. Jumper Selectable for either NO or NC.

Operating Temperature and Humidity Range:
32 to 120 degrees F. (0 to 49 degrees C). 0-90% RH, non-condensing.

Dimensional Information



Number of 3"x3" Modules High or Wide	Overall Dimensions (Inches)	
	H or W	Cutout HC or WC
1	4.250"	3.875"
2	7.250"	6.875"
3	10.250"	9.875"
4	13.250"	12.875"
5	16.250"	15.875"
6	19.250"	18.875"
7	22.250"	21.875"
8	25.250"	24.875"
9	28.250"	27.875"
10	31.250"	30.875"
11	34.250"	33.875"
12	37.250"	36.875"
13	40.250"	39.875"
14	43.250"	42.875"

Note:
1) For location reference of a given 3" x 3" module, the first number is the horizontal row, the second number is the vertical column. Location 1-1 is always the top left-hand module as viewed from the front.

2) Max. width for a rack mounted unit is 5 modules for a 19" rack or 7 modules for a 24" rack.

3) Any 3" x 3" module may contain 1, 2, 3, or 4 windows in a bezel.

Module Components (Front)

Figure 8

Window Engraving Information

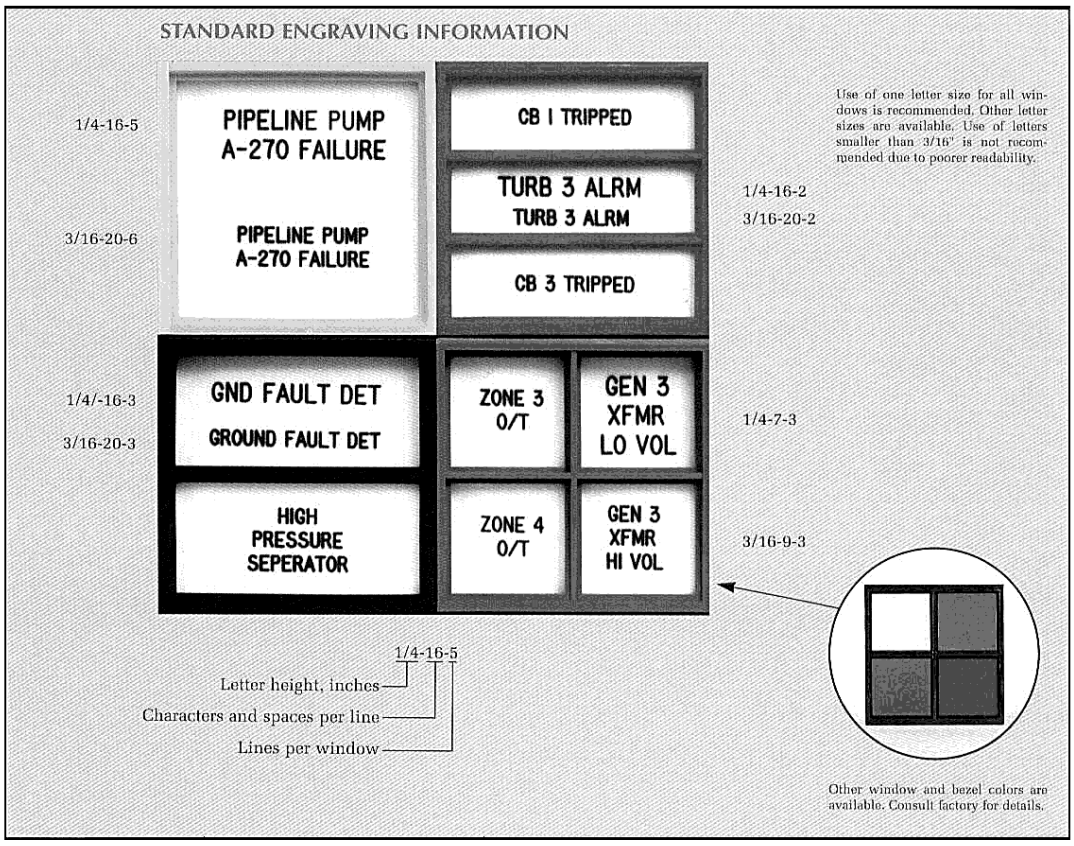


Figure 9