

SEEKIRK

Series A1100 & A1200

Control Area Annunciators for installation in, on or near monitored equipment

Benefits

- Uninterrupted Protection—due to very rugged construction and a highly reliable time proven design; equipment is particularly well suited for critical processes and remote unattended locations
- Custom tailored to your requirements—at non custom prices through design flexibility
- Fast return to service—with rapid replacement of plug-in point modules and alarm lamps—if needed
- Virtually false-alarm free

Applications

Model A1100 and A1200 annunciators are used in control areas or control rooms in all types of industrial plants, in electric, gas and water utilities, and in commercial buildings.

Electric utility applications include control rooms in generating, regulating and distribution stations. Monitoring may extend to unattended substations and other remote equipment.

Industrial applications include the monitoring of critical machinery throughout the plant, and security systems for intrusion, fire or environmental control. All types of continuous-process equipment for chemical batching, refining, printing, steel rolling mills, plastics and pulp and paper production, may also be protected.

Commercial applications relate primarily to security systems for fire, intrusion and vital support systems. Typical buildings are high rise offices, large banks and their branches, hospitals and nursing homes, and hotels.

An important application of the A1100 or A1200 is the use in a system with other, smaller annunciators such as the A1000, A1010 or A1020 Series. For example, a 24 point A1100 in a control room can monitor 20 nearby equipment trouble points; the remaining 4 points can be connected to four distant 10-point A1010 annunciators located near discreet groups of remote equipment. The A1100 can in this case effectively monitor 60 points. A system such as this can provide significant cost reductions when compared to a single 60-point annunciator. Savings are realized for cable and conduit materials, installation labor and initial annunciator costs.

General Description

Models A1100 and A1200 are similar in that they are both custom configured to meet each customer's requirements. They both combine reliability with economy and are completely modular, permitting flexibility in the number of annunciating points ordered, and how they are arranged in rows and columns.

The A1100 and A1200 annunciators are the first low-cost units to use individual plug-in modules and terminal blocks. These components are located directly behind each visual display (window or lamp). The major components for each annunciator point are thus grouped together for simplicity of wiring and troubleshooting.



Typical A1100 Bullseye Annunciator (shown with optional alarm)



Typical A1200 Window Annunciator

The two models differ only in the "visual display." The A1100 uses a single "bullseye" lamp with "point" identification provided by an engraved nameplate next to it. This reduces cost significantly. The A1200 uses back-lighted windows, with point identification engraved directly on each translucent window panel. While more expensive than the A1100, the A1200 offers better visual-alarm reliability (dual, parallel lamps are used for each window), and is more modern in appearance.

Mechanical

A1100 and A1200 models can be configured in any practical height/width arrangement of "units." The principal differences are as follows, and as shown in the Dimension Chart for each.

A1100—One "unit" is one annunciating point. Two "units" must be reserved to allow for front-panel control switches, as well as the related control modules that install behind those "unit" spaces. (The two units must be reserved even if the A1100 is ordered with remote control switches.)

A1200 — One "unit" is two annunciating windows. (The A1200 will thus always have an even number of window spaces.) Control switches mount on the lower edge of the main bezel, and may be omitted if remote switches are used. (It is not necessary to reserve front-panel "window" space for the internal control modules.)

Cabinet

A1100 and A1200 annunciators are designed for ease of installation. Styles are available for rear, flush or rack mounting. For flush mounting, adjustable clamps (J-Bolts) are furnished to eliminate mounting holes. The cabinets are designed for maximum accessibility to terminals and modules, for ease of field wiring and module replacement. The entire front panel is hinged and is securely held in place with retaining screws. Both A1100 and A1200 cabinets are manufactured with heavy-gauge steel and finished in semi-gloss baked enamel over a primer coat. The A1100 is finished in light-gray enamel; the A1200 finish is black enamel. Other colors are available on request.

Terminals (A1100 and A1200)

The terminals are barrier feed-thru type located directly behind each point, adjacent to the plug-in point module. This permits easy identification and wiring.

A1100 "Bullseye" Points

Legend plates are laminated semi-rigid vinyl. Engraved legends appear in black against a white background (other color combinations available by special order). The pressure-sensitive adhesive is semi-permanent; the plates may be removed and replaced several times without impairing their adhesion.

Blank unaffixed legend plates are normally supplied with each A1100 annunciator. If desired, Seekirk will do the engraving for a small fee; detailed legend information should be supplied.

Bullseye lamps are miniature slide-base types rated 10,000 hours MTBF. They may be replaced from the front without a special tool, by removal of the lens cap. Lens cap colors available are amber, red, green, blue and white.

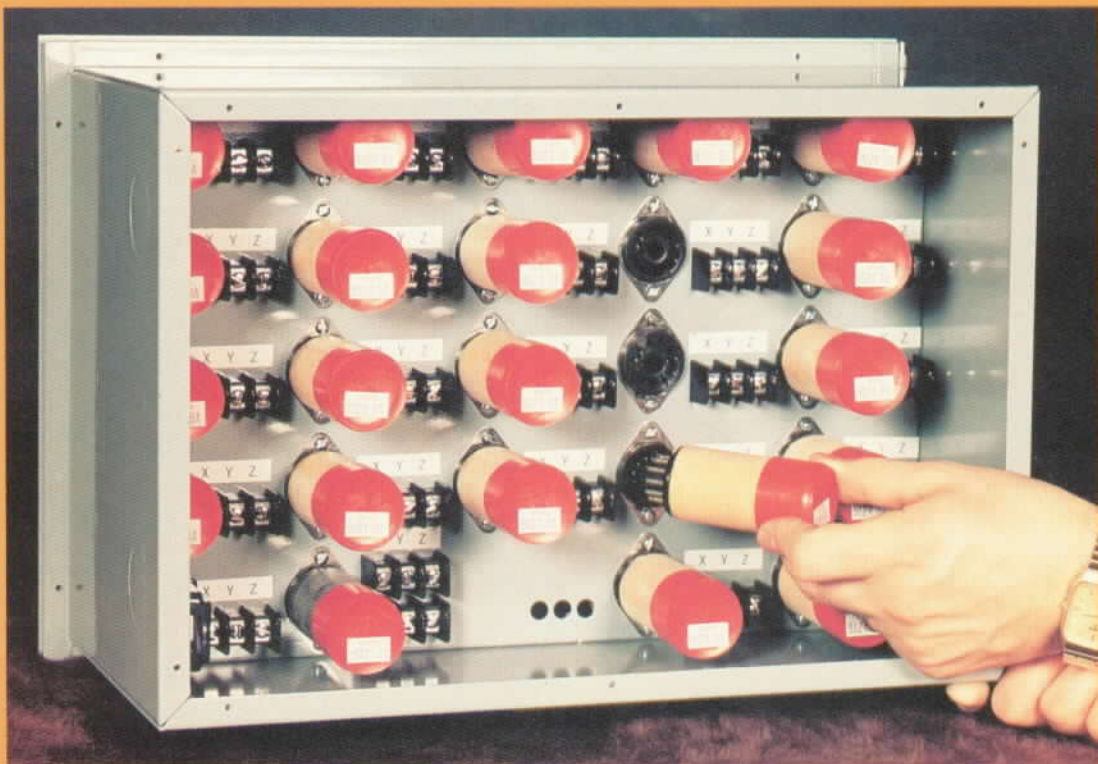
A1200 Window Units

Each A1200 Window Unit is a module which includes a snap-out bezel with two translucent window panels, and a removable card that holds four lamps. Two paralleled lamps are used for each window. Terminals on the rear of the module accommodate internal wiring.

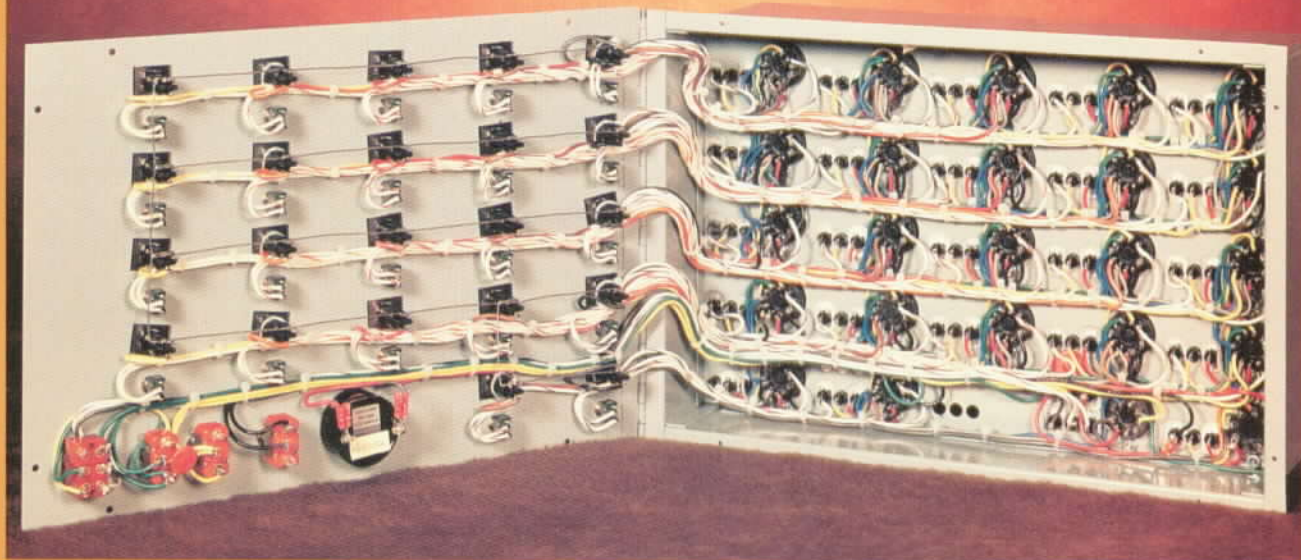
Window bezels are made of Lexan. They are heat-resistant, self-extinguishing, and will not warp due to heat or age. The standard color is black; special colors are available.

Two translucent window panels snap into each bezel. These are heat-resistant and self-extinguishing. The standard color is white with black-filled engraving; other combinations are available.

Lamps are the bayonet type and are rated 10,000 hours MTBF. Lamps are replaced by snapping out the two-window bezel for access to the slide-out lamp card. Failure of a single lamp is readily discernable by lower window illumination during Test or Alarm.



Rear view - A1100 or A1200. Point modules are quickly exchanged; adjacent terminals are for field wiring



A1100 interior shows rear of front panel (left) and rear of plug-in modules connectors

Electrical Power Requirements

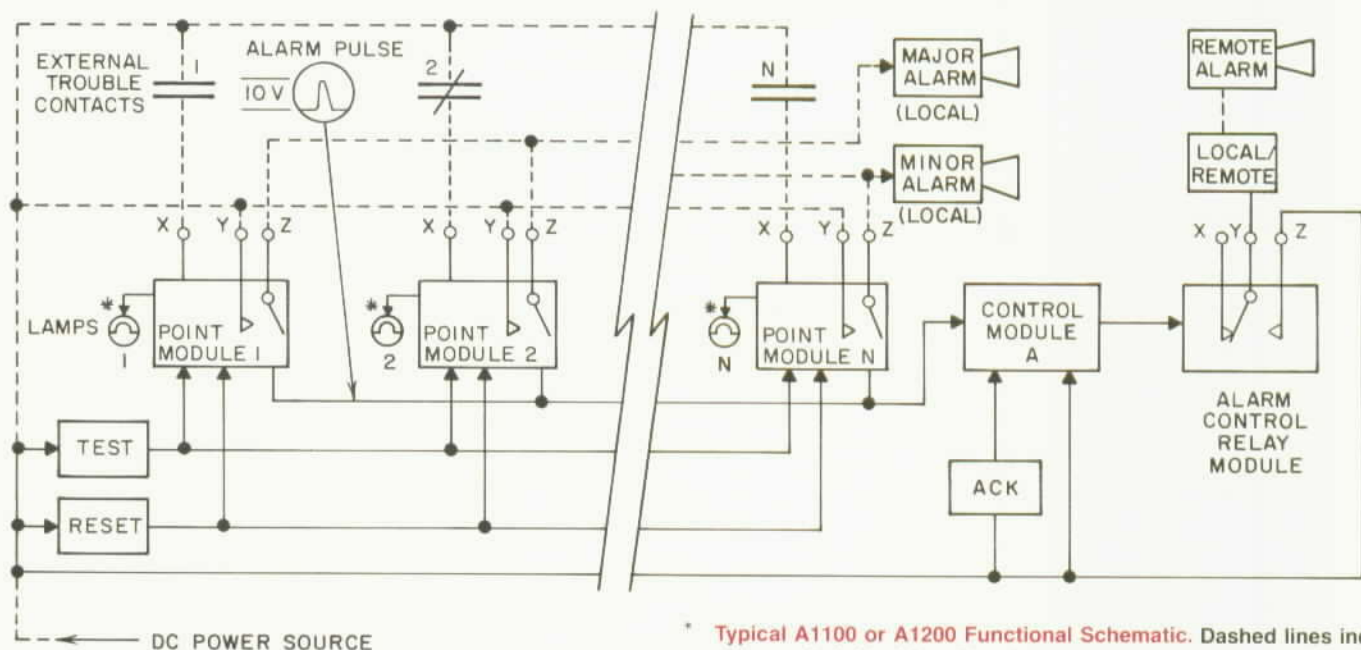
A1100 and A1200 annunciators operate from a dc power source. Input voltage may be 24, 48 or 125 VDC. For installations where dc power is not available, Seekirk can provide an optional dc power supply. The power requirements in the alarm or test state is approximately 5 watts per point; the power source should be capable of supplying $5 \times N$ watts, where N is the total number of annunciating points. (Point modules consume no power in the normal state.)

Diodes are included to provide protection against accidental reverse-polarity wiring of the dc source.

Internal & Field Wiring

The accompanying A1100 and A1200 simplified diagram shows the general wiring required. Dashed lines in the diagram indicate typical field wiring (by the user), although many variations are possible. In general, field wiring involves connecting dc power, equipment trouble contacts, and external alarm devices.

All models are factory wired and assembled to reduce the field wiring to a minimum. Transient voltage protection is provided in each point module and a transient voltage suppressor is wired directly across the dc input terminals. This permits the use of unshielded, multi-conductor cables for connecting equipment trouble contacts.



* Typical A1100 or A1200 Functional Schematic. Dashed lines indicate user's field wiring. The single lamp shown at each point module applies to A1100 models. A1200 models have dual window lamps in parallel, for each point module.

Operation

General

The A1100 and A1200 annunciators are extremely flexible and are individually tailored to meet exact application requirements. Several point module sequences are available, each designed to monitor a set of external troubled contacts. Operation of trouble contacts will cause the appropriate alarm sequence to be initiated.

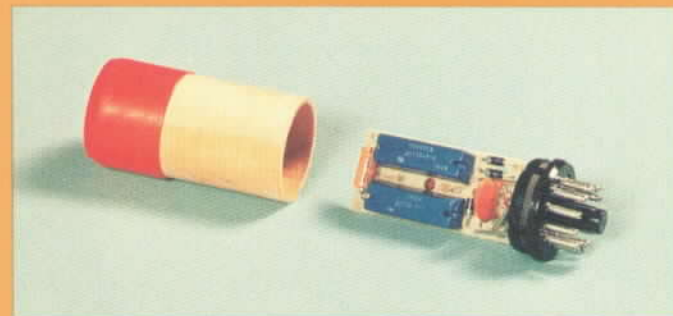
Point Modules

The operating sequences of points on the A1100 or A1200 annunciator are determined by the associated point module. Either model can have any combination of A, B or C sequences, as shown in the following table.

All point modules each have one set of isolated auxiliary relay contacts which may be used for retransmission of the alarm. (See Functional Diagram.) These auxiliary contacts can be used individually or in groups as the customer wishes.

When an alarm occurs for a given point, an output pulse is generated. This pulse is received by the control module which in turn energizes a common relay. The relay contacts may be used to control a horn.

The A1100 and A1200 point modules can be ordered for operation with normally-open or normally-closed external trouble contacts.



Plug-in Point Module-A1100 or A1200

Controlling Modules

These modules control the various A1100 and A1200 functions relating to alarm sequences, control switches, and operation of the customer's external alarm devices. Modules in this group include a Control Module and a Common Relay Module. The modules are also the plug-in tubular type.

Usually, only one control module and one relay module are included with each annunciator. Input to the control module may be from one, several or all point modules, and from the control switches. The control module is used as a driver for the common relay module. The relay module in turn controls the customer's external visual or audible alarm devices.

Internal Audible Alarm (Optional)

Either the A1100 or A1200 can be equipped with an optional, built-in audible alarm. This sound device mounts on the front panel, and produces a medium pitched signal of 68 to 80 dB.

Heavy-Duty Relays (Optional)

Optional heavy-duty relays (10-ampere contact rating) can also be installed in most versions of the A1100 or A1200, or may be located externally. These are used for controlling the high-level sound devices, such as sirens or horns, needed in noisy environments.

Operation Switches

All standard models have three panel-mounted switches: ACK (Acknowledge), RESET and TEST. These are usually installed on the front panel. However, if desired, pushbutton switches for these functions can be supplied separately for external panel mounting. Any switch can be excluded if its function is not needed.

ACK Switch

As can be seen in the Operating Sequences Table, most point module sequences include an "acknowledge" step (using the momentary ACK switch). Typically, this step silences the audible alarm, while allowing the alarm-related lamp or window to remain on.

RESET Switch

This momentary switch is typically used on all models. When the switch is operated, the lamp for the point in alarm will go out if the trouble has cleared.

TEST Switch

The momentary TEST switch is used to simultaneously test all points of the annunciator. The test is full-functional for all sequences. It does not interfere with the operation of the annunciator; any alarm condition that exists at the time the TEST switch is released will be indicated.

Aux Cutoff Switches (Optional for A1100 only)

In some A1100 applications it may be desirable to interrupt or disarm the auxiliary contact of a specific point module, without affecting the normal lamp/alarm operation or the operation of other points on the annunciator. The optional cutoff switch provides this capability. It is a miniature toggle and is installed just below the front panel lamp of the desired annunciating point. It may be used with one, several or all annunciating points.



A1100 with optional cutoff switch at each point

Point Module Operating Sequences

special sequences
available by request

SEQUENCE OF EVENTS		1		2		3		4		5	
		1	2	2	3	4	3	4	5		
OPERATING SEQUENCE TYPE	SIGNAL DEVICE (NOTE 1)	EXTERNAL TROUBLE CONTACTS STATUS		OPERATING SWITCH	EXTERNAL TROUBLE CONTACTS STATUS		OPERATING SWITCHES				
		NORMAL	ALARM	"ACK"	RET TO NORM AFTER "ACK"	RET TO NORM BEFORE "ACK"	"ACK" (NOTE 2)	"RESET" (NOTE 2)			
A	VISUAL	OFF	ON	ON	OFF	OFF	NC	NC			
	COMMON RELAY	OFF	ON	OFF	OFF	ON	OFF	NC			
	AUX RELAY	OFF	ON	ON	OFF	OFF	NC	NC			
B	VISUAL	OFF	ON	ON	ON	ON	ON	OFF			
	COMMON RELAY	OFF	ON	OFF	OFF	ON	OFF	OFF			
	AUX RELAY	OFF	ON	ON	ON	ON	ON	OFF			
C	VISUAL	OFF	ON	ON	ON	ON	ON	OFF			
	COMMON RELAY	OFF	ON	OFF	OFF	ON	OFF	OFF			
	AUX RELAY	OFF	ON	ON	OFF	OFF	OFF	OFF			

NOTES:

1. VISUAL DEVICE IS LAMP(S) ON ANNUNCIATOR. COMMON RELAY IS ENERGIZED WHEN ANY ANNUNCIATOR POINT IS ACTIVATED. AUX RELAY (IN POINT MODULE) IS ENERGIZED ONLY WHEN ITS POINT MODULE IS ACTIVATED. IN THE TABLE, "ON" MEANS THAT THE RELATED RELAY IS ENERGIZED.
2. "NC" INDICATES "NO CHANGE" IN SIGNAL DEVICE STATUS IF SWITCH IS OPERATED AT THIS STAGE IN THE SEQUENCE OF EVENTS.

Engraving Information

The illustrations below show typical engraving for A1100 and A1200 annunciators. The two letter sizes given in the tables are recommended; other sizes are optional. (Use of one letter size for all legend plates or windows is also recommended.)



A1100 Legend Plate

(A1100)

LETTER SIZE	MAX LINES	MAX CHAR'S PER LINE
3/16"	5	14
1/4"	4	12



A1200 Window Display

(A1200)

LETTER SIZE	MAX LINES	MAX CHAR'S PER LINE
3/16"	4	20
1/4"	3	16

A1100 legend plate with 3/16 in. letters; table above shows maximums for lines per window and characters per line.

A1200 window panels with 3/16 in. letters; table above shows maximums for lines per window and characters per line.

Specifications

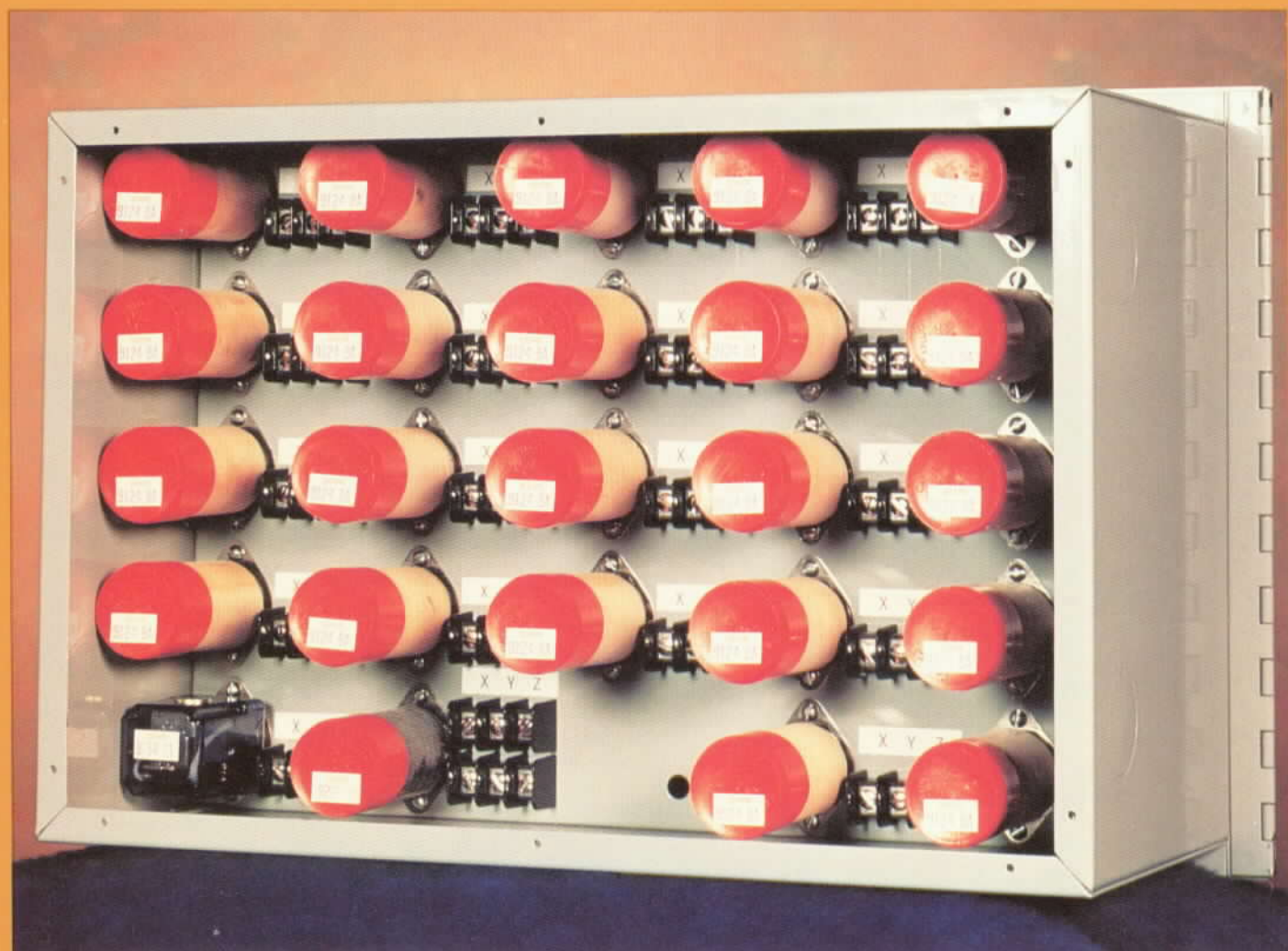
(Subject to change without notice)

Mechanical

Cabinet	Formed and welded 16-gauge steel. Adaptable for flush, wall or rack mounting. The Model A1100 is finished in semi-gloss ASA-61 light gray baked enamel. The A1200 standard color is black.
Legend plates (A1100 only)	Laminated semi-rigid vinyl, 2" x 3" nominal, semi-permanent pressure-sensitive adhesive.
Windows (A1200 only)	Two 1 3/16" x 2 5/8" windows per dual bezel. Window material is translucent, heat resistant, self-extinguishing.
Terminals	Barrier type; self-extinguishing block, #6 screws
Lamps (A1100)	Switchboard miniature slide base; rated 10,000 hours MTBF.
Lamps (A1200)	Bayonet base; rated 10,000 hours MTBF.

Electrical

Input voltage choices	24 VDC (18 to 28 Volt Range). 48 VDC (36 to 56 Volt Range). 125 VDC (90 to 140 Volt Range).
Input Power	Less than 5 watts per point in alert or test state. No power is consumed in normal state.
Relay contacts	Long-life sealed reed, contacts rated 120 mA at 125 VDC; 15 W max.; 350 VDC min. breakdown; 1.5 Amp. max. operating current.
Response time	5 milliseconds for point modules. Other times available on request.
Temperature range	14° F to 120° F (-10° C to 49° C).
Wiring Insulation	PVC self-extinguishing; rated 1000V
Alarm control relay module	Normal-open or normal-closed SPST, contacts rated 2 Amps max.
Heavy duty relays (Optional)	Normal-open or normal-closed DPDT, contacts rated 10 Amps max.



Rear View — A1100 or A1200. Either Series requires two plug-in control modules. In this view the control modules are the two modules to the left, in the bottom row.

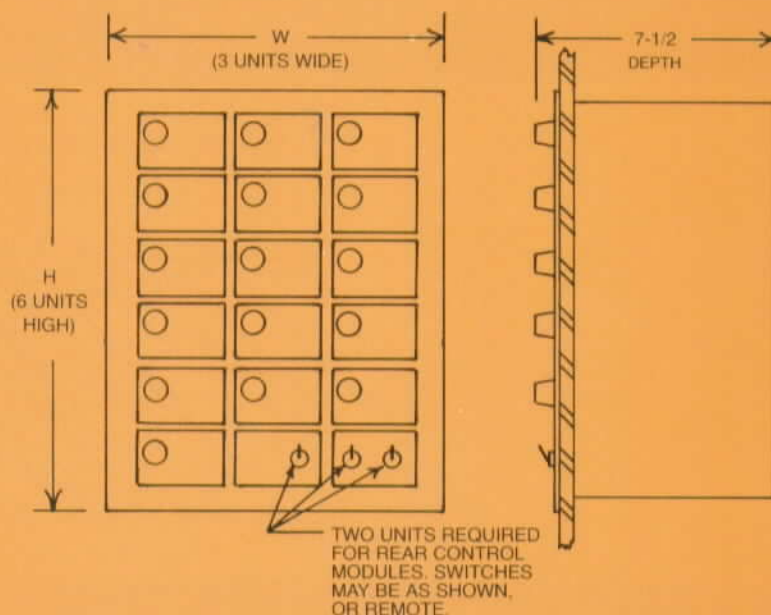
Configuration

A1100 and A1200 models can be configured in any practical height/width arrangement of "units." The dimensions and requirements specific to each series are shown below.

A1100 Configuration & Dimensions Chart

UNITS HIGH	H (IN.)	CUTOUT (IN.) †	UNITS WIDE	W (IN.)	CUTOUT (IN.) †
1	3-1/4	2-3/8	1	4-7/16	3-3/8
2	5-1/4	4-3/8	2	7-7/16	6-3/8
3	7-1/4	6-3/8	3	10-7/16	9-3/8
4	9-1/4	8-3/8	4	13-7/16	12-3/8
5	11-1/4	10-3/8	5	16-7/16	15-3/8
6	13-1/4	12-3/8	6	19-7/16	18-3/8
7	15-1/4	14-3/8	7	22-7/16	21-3/8
8	17-1/4	16-3/8	8	25-7/16	24-3/8
9	19-1/4	18-3/8	9	28-7/16	27-3/8
10	21-1/4	20-3/8	10	31-7/16	30-3/8
11	23-1/4	22-3/8	11	34-7/16	33-3/8
12	25-1/4	24-3/8	12	37-7/16	36-3/8

† CUTOUT TOLERANCE $\pm 1/16$ IN.

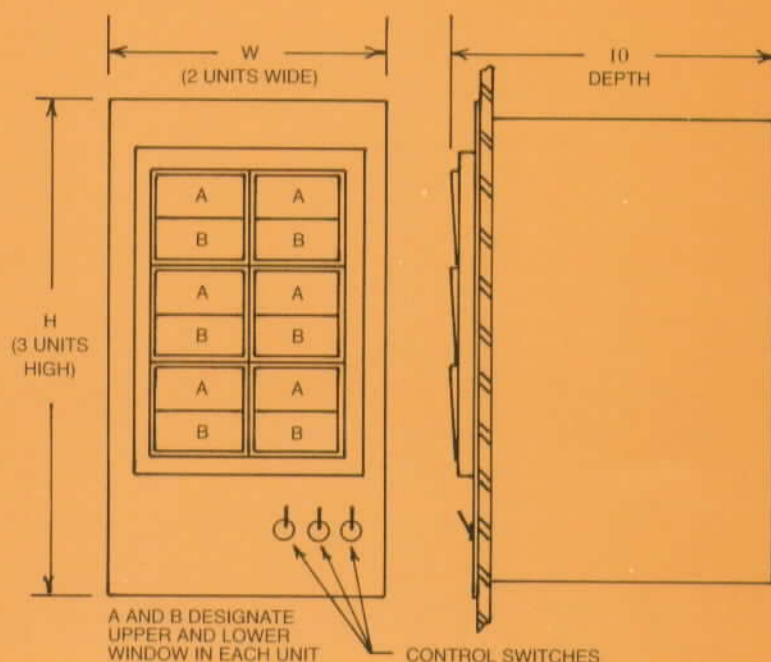


For A1100 models, one unit is one annunciating point. Two units must be reserved to allow for front-panel control switches, as well as the related control modules that install behind those unit spaces. (The two units must be reserved even in the A1100 is ordered with remote control switches.)

A1200 Configuration & Dimensions Chart

UNITS HIGH*	H (IN.)	CUTOUT (IN.) †	UNITS WIDE	W (IN.)	CUTOUT (IN.) †
1	7-1/2	6-5/8	1	5-1/2	4-7/8
2	11-1/2	10-5/8	2	8-1/2	7-7/8
3	15-1/2	14-5/8	3	11-1/2	10-7/8
4	19-1/2	18-5/8	4	14-1/2	13-7/8
5	23-1/2	22-5/8	5	17-1/2	16-7/8
6	27-1/2	26-5/8	6	20-1/2	19-7/8
7	23-1/2	22-5/8	7	23-1/2	22-7/8
8	26-1/2	25-7/8	8	26-1/2	25-7/8
9	29-1/2	28-7/8	9	29-1/2	28-7/8
10	32-1/2	31-7/8	10	32-1/2	31-7/8
11	35-1/2	34-7/8	11	35-1/2	34-7/8
12	38-1/2	37-7/8	12	38-1/2	37-7/8

* TWO WINDOWS PER UNIT † CUTOUT TOLERANCE $\pm 1/16$ IN.

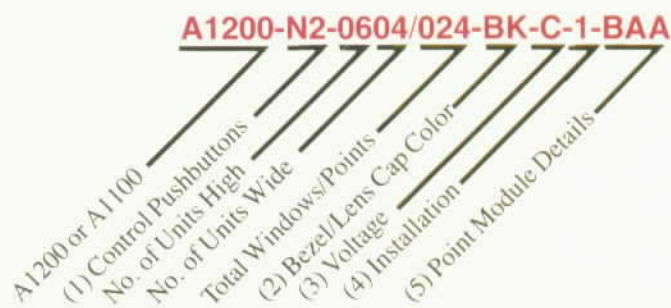


For A1200 models, one unit is two annunciating windows. (The A1200 will always have an even number of window spaces.) Control switches mount on the lower edge of the main bezel; these may be omitted if remote switches are to be used. (It is not necessary to reserve front panel "window" space for the internal control modules.) All windows will be active annunciating points unless specified otherwise.

Ordering and Specifying Information

Refer to the information below to make up your specific model number for an A1100 or A1200 annunciator. Some details may not be covered by specific model number segments—if necessary the model number may be followed by an asterisk (*) which indicate that special features are required; be sure to list details of those features separately.

Specific Model Number Makeup



(1) CONTROL PUSHBUTTONS N2

Location _____

- N - Integral
- X - External*

Types _____

- 1 - TEST, ACK
- 2 - TEST, ACK, RESET
- 3 - TEST, ACK, Special**
- 4 - TEST, ACK, RESET, Special**

* Specify if Seekirk to supply

** Specify name and function

(2) BEZEL or LENS CAP COLOR

- RD - Red
- YL - Yellow
- GN - Green
- BU - Blue
- BK - Black (Bezel Only)
- MX - Mixed (Supply sketch to define)

(3) VOLTAGES

- A - 24 VDC
- B - 48 VDC
- C - 125 VDC
- E - 120 VAC (Seekirk-supplied external Power Supply provides 24 VDC)
- K - 230 VAC (Seekirk-supplied external Power Supply provides 24 VDC)

(4) INSTALLATION

- 1 - Flush mount, panel clamps supplied.
- 2 - 19" Rack mount
- 3 - 24" Rack mount
- 4 - Cabinet required - specify type/style/size.

(5) POINT CARD DETAILS (See notes below) BAA

Sequence (Note 1) _____
Letter from table: either A, B, C; X = Sp.

Field Contact (Notes 2) _____
A - All points supplied for N.O. contacts
B - All points supplied for N.C. contacts
C - Mixed per chart supplied with order

Auxiliary Relay Option _____
A - N.O. Contacts
B - N.C. Contacts
C - Mixed per chart supplied with order

- Notes:
- 1. For special, mixed or first out sequences consult Seekirk.
 - 2. All point modules are supplied to work with either N.O. or N.C. field contacts. They can be intermixed within the same annunciator.

Recommendations, Quotations

Based on the information supplied, we will be pleased to provide engineering assistance or recommendations, and provide our quotation, without obligation. Thank you for considering Seekirk.

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