SEEKIRK

Series A1010 & A1020

Remote or Local Annunciators

for installation in, on or near monitored equipment

Benefits/Features

- Exceptional reliability and fast return to service with plug-in modules
- Easy to install in minimal space—very compact
- Economical—open-frame design—monitors up to 10 points; buy only the number of plug-in modules required
- Identify major or minor alarms
- Determine problem causes quicker with first-in alarm identification

Applications

The A1010/A1020 Series annunciators are very compact, contain up to 10 monitoring points and are usually located at or near the equipment to be monitored. In general, this may be any equipment or system that contains devices (sensors) which provide a contact closure or opening to indicate status. This can include large power transformers, all types of rotating equipment, security systems and production line equipment.

Due to the compactness and open-chassis design of the A1010/A1020 Series, an ideal application is where the unit can be installed within the equipment chassis, or in a control console near the equipment. However, the units can also be externally mounted in relatively clean, corrosion-free environments.

The "common relay" makes the units ideal for monitoring equipment in remote, unattended areas. Only a single pair of wires is required to connect the relay to the control area. Used in this manner, expensive cable runs and installation labor costs are vastly reduced. Materials and labor for numerous and distant cable runs can frequently cost more than a single A1010 or A1020 annunciator.

Mechanical

Series A1010/A1020 annunciators are extremely compact units. They may be wall mounted externally or inside an enclosure near the equipment to be monitored; they may also be panel mounted using the optional enclosure. Modular construction gives good economy along with flexibility. The fully encapsulated plug-in point and relay modules are inexpensive and may be stocked for emergency replacement or for increasing annunciator capacity.

Any number of point modules from one to ten may be used, depending upon monitoring requirements. Modules may be quickly replaced, added or removed in the field. Modules plug into edge-type connectors on the mother board.

A 16-gauge steel chassis supports the glass-epoxy mother board. The eleven module connectors, the indicator bar containing the lamps, and the terminal strip are all permanently secured to the mother board.

Models A1010 and A1020 **— The A1010 (shown to left) is visually similar to the A1020 except for the A1020's individual alarm cutoff switches. These switches allow "local" control of each point. The A1020 is shown in an optional dust-tight enclosure with clear plastic cover. The enclosure also permits flush mounting.**

The point identification plate covers the point and relay modules. Legends may be hand-lettered on the cover plate and can be changed by erasing. Optional, individual engraved legend plates, with semi-permanent adhesive backing, may be applied on the cover plate at each point.

Lamps are miniature, slide-base types covered by snap-on lens caps. Lamps provide over 180° of visibility and are rated at 5000 hours MTBF. All lamps are replaceable from the front.

Electrical

The mother board provides printed-circuit interconnection between the point modules, relay module(s), terminal strip, and lamps. Point and relay module connectors mounted directly on the board hold modules firmly in place. The relay module connector is keyed so that a point module cannot accidentally be inserted.

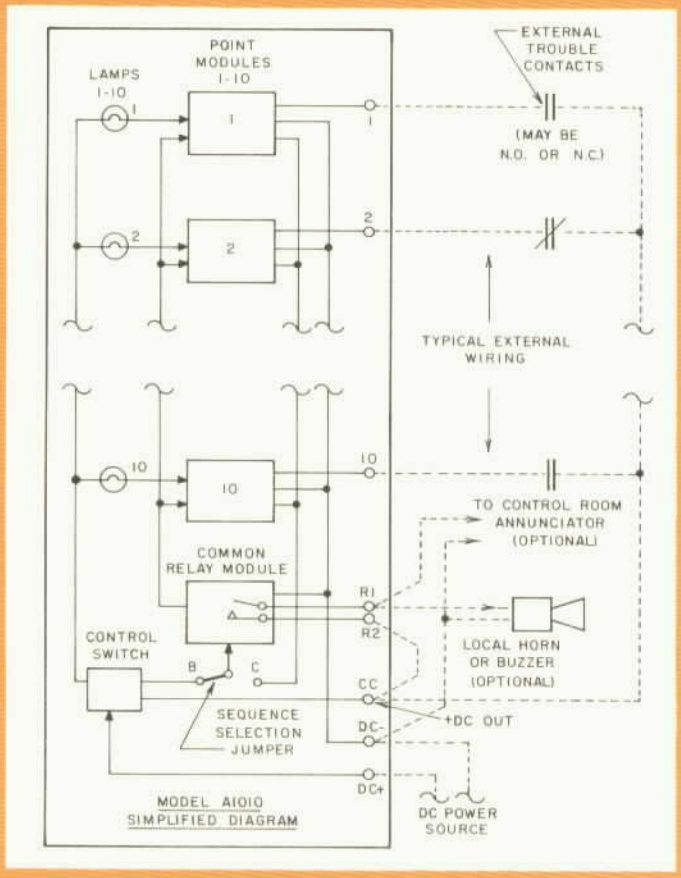
The terminal strip is a feed-thru type, containing all necessary input, output and power terminals. It is appropriately marked for ease of making external connections.

Voltage of the DC power source may be 24, 48, or 125 volts. Power requirements are low and as a result wiring is simple. No shielding is required, and light-duty multi-conductor cables may be used. Diodes provide protection against accidental reverse-polarity connection of the DC source. Transient voltage protection is provided for all wiring.

OPERATION

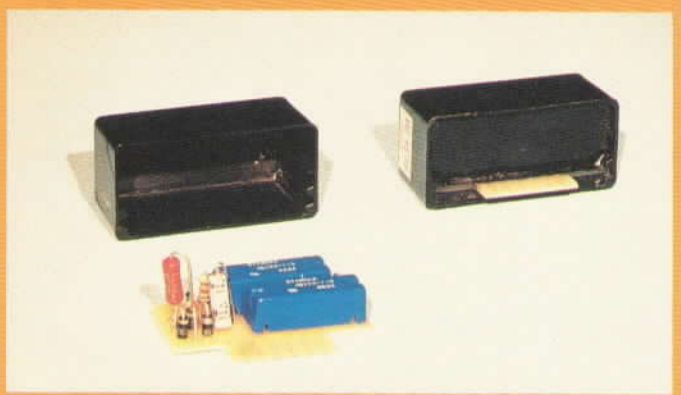
General

A1010/A1020 Series annunciators may contain up to ten point modules, each wired to a set of trouble contacts on the equipment or system to be monitored. Operation of a set of trouble contacts is indicated by (1) illumination of the lamp and (2) simultaneous operation of the alarm control relay module



Point Modules

The point modules are fully encapsulated plug-in type packages of the latest design. A set of field trouble contacts is connected to each point module. When the trouble contacts actuate, the point module turns on its associated lamp and locks it on, and also actuates the relay module.



BEFORE ENCAPSULATING

ENCAPSULATED POINT MODULE

Relay Modules

Relay modules are fully encapsulated and are the plug-in type. The relay contacts are used to control either a local alarm or a main control room annunciator. The relays may either follow the field contact or the lamp, depending upon the connection of the internal jumper. Models A1010 and A1020 contain one relay module; Models A1011 and A1021 contain two relay modules; see "Model Differences."

Control Switch

The control switch is a three-position, spring-loaded switch that controls the NORMAL, TEST and RESET functions:

The control switch is spring-loaded in the center (NORMAL) position. This keeps the annunciator in the alarm-ready state.

TEST

The control switch is moved to the TEST position to check annunciator operation. This provides a full functional test of the annunciator by simulating a trouble input to all point modules. All lamps should illuminate and the common relay module(s) should energize. Following the test, the switch must be momentarily placed at RESET.

RESET

After trouble has cleared (or after TEST is used) the control switch is momentarily placed at RESET to turn off the lamp(s). If the trouble has not cleared, the lamp(s) will remain on when the switch returns to the NORMAL position.

Sequences

Series A1010/A1020 annunciators have two field-changeable operating sequences, B and C. Both sequences utilize lamp memory in which the altered lamp remains locked on until the trouble has cleared and the annunciator is RESET.

In Sequence B, the operation of the common relay module will follow the alarmed lamp; that is, it will also "lock on" with the lamp.

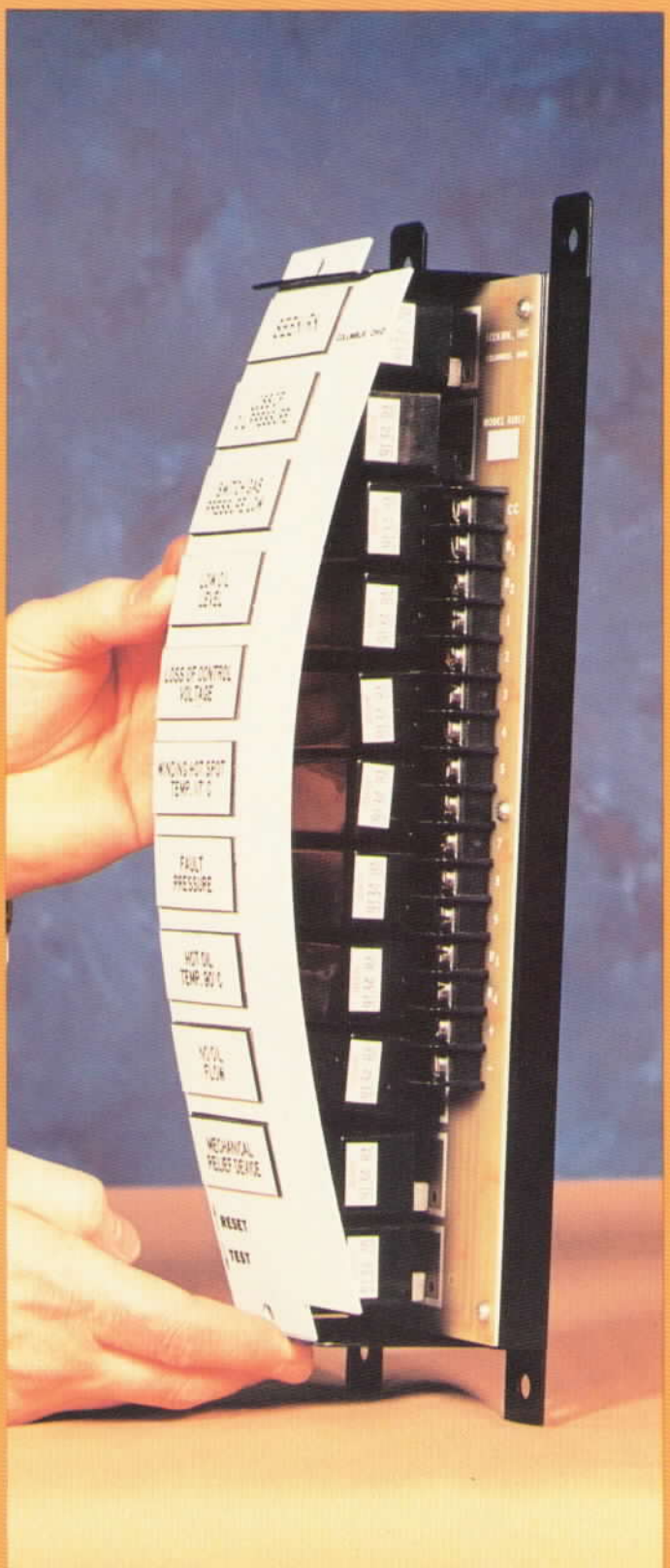
In Sequence C, the operation of the common relay module will follow the equipment trouble contacts. It will clear when the trouble contacts return to normal. However, the lamp must still be manually RESET.

Selection of Sequence B or C is accomplished by the positioning of a plug-in wire jumper located on the mother board.

Installation and Maintenance

The annunciator should be installed at a location where cable runs to the external trouble contacts are of minimum length. The unit is rear-mounted with four screws; mounting dimensions are given in "Specifications." Connections for all external wiring are clearly marked at the terminal strip.

Maintenance is minimal. The lamps are rated at 5000 hours MTBF. The modules are transient-protected and are rated at 50,000 hours MTBF. Maintenance consists primarily of periodic testing simply by using the TEST function. Both lamps and modules are quickly replaceable from the front without removing power; no tools are required.



Easy Installation, Rapid Maintenance — **Plastic legend cover snaps out for front wiring access, or for quick, simple replacement of plug-in modules.**

General Specifications
(Subject to change without notice)

Mechanical

Size, W × H × D	5″ × 14½″ × 2⅜″ (12.7cm × 38cm × 6cm)
Weight	3 pounds (1.35 kg)
Mounting	Wall mount on 4 1/16″ W × 13½″ H (10.3 × 34.3 cm.) centers; flush mount (in optional enclosure) in 5⅝″ W × 12⅞″ H (14.3 × 32.7 cm.) cut-out.
Terminals	Barrier-type strip, plated #8 screws
Cover plate	Semi-rigid white matte-surface vinyl. Matte surface permits hand-lettering of point legends, with pencil or pen.

Electrical

Input voltage choices	24 V dc nominal, 18 to 27 V dc range. 48 V dc nominal, 35 to 56 V dc range. 125 V dc nominal, 90 to 140 V dc range.
Input power	Nominal of 3.2 watts per point in alert state. Maximum of 32 watts total during TEST function.
Trouble sensors	External customer contacts, normally closed or normally open.
Relay module contacts	Long-life sealed type, 15 VA resistive (normally open or normally closed).
Lamp operation	Locks on until manually RESET, when external contacts change to the "trouble" state.
Lamps	Miniature switchboard slide-base rated 5000 hours MTBF.
Relay operation	Sequence B — Locks on same as lamp. Sequence C — Energizes when external contacts change to "trouble" state; de-energizes when external contacts return to "normal" state. (Sequence B or C selected in field by positioning of plug-in jumper.)
Surge protection	1 kV for 1 millisecond, field inputs. 200 V for 1 second, DC input.
Response time	For noise immunity, each point-module input is filtered to achieve a minimum response time of 3 milliseconds. This time remains essentially constant over the extremes of temperature and input voltage.
Temperature	0° F to 140° F (−18° C to +60° C)

Model Differences

All models may be ordered with only the number of point modules initially required and expanded later by the addition of new point modules.

Model A1010

The Model A1010 monitors from one to 10 trouble contacts and contains a single common relay module with one set of alarm control contacts (N.O. or N.C.)

Model A1011

The Model A1011 monitors from one to nine trouble contacts and contains two common relay modules, each with one set of alarm control contacts (N.O. or N.C.). Either relay module can be independently set up for sequence B or C. The relay modules can be operated independently by two selected groups of point modules. The method of operation is determined by the insertion or removal of jumpers J1 through J8 located on the mother board:

Simultaneous Operation

With all jumpers left in place, both common relay modules will operate simultaneously.

Separate Operation ("Major/Minor" Alarm Control)

To separate the point modules into major and minor alarm groups, remove one of the jumpers. All point modules above the removed jumper will control the top relay module. All point modules below the removed jumper will control the bottom relay module.

The Model A1011 (or A1021) may also be used as a simplified "first alarm in" annunciator. Only the first alarm which occurs will be indicated, until the trouble is cleared. One N.C. and one N.O. relay module must be ordered. Wiring details are given in the instruction manual.

Models A1020 and A1021

Models A1020 and A1021 are ideal for use where an audible alarm is to be actuated in the immediate vicinity of the annunciator. These models include an alarm cutoff switch for each monitoring point. (10 switches for 10 points on A1020; 9 switches for 9 points on A1021.) When a point is in alarm, the cutoff switch may be used to cut off the potentially annoying audible alarm. The switches are miniature toggles located just below each annunciating lamp. Except for the addition of the cutoff switches Model A1020 is identical to Model A1010, and Model A1021 is identical to Model A1011.

Reflash Versions

All models previously described can be used in conjunction with control room annunciators equipped with flashing sequences. In this case it may be more desirable to use the "reflash" versions of these remote models, so that subsequent alarms will not be missed.

When an alarm occurs at the remote site, the remote annunciator will cause a related window to flash. When this alarm is acknowledged in the control room, that window will change to steady on. Another alarm at the remote location will now cause the same window to flash again, or "reflash."

To specify the reflash feature, add "F" to the model number; i.e., A1010F, A1011F, A1020F or A1021F.

Optional Flush-Mounting Enclosure

The optional flush mounting enclosure (see front cover) accepts all Series models. It is made of 16-gauge steel and has a magnetically latched clear Lexan window which acts as a dust seal, allows for viewing lamps and for internal access. Four mounting clamps are supplied. (See drawing 02B100821 in catalog for dimensions and details.)

How to Order

For each annunciator ordered:

1. Specify Model number (see "Model Differences").
2. Specify number of point modules and type (N.O. or N.C.) or external sensor contacts each is to be used with. (Example: total of 7 point modules, 4 to be used with N.O. external contacts and 3 to be used with N.C. external contacts.)
3. Specify the type of relay contacts required (N.O. or N.C.). (Models A1011 and A1021 can use one relay of each type, or both of same type.)
4. Specify supply voltage: 24, 48, or 125 V dc. If DC power is not available an optional DC power supply can be supplied by Seekirk. Input required is 120 V ac. Specify DC output voltage desired (24, 48 or 125 V dc).
5. Specify engraving if Seekirk is to supply. Small, self-adhesive plates, suitable for engaving the legend for each point, are available on request. Engraving of these plates by Seekirk will be done at extra cost.
6. Specify spare parts desired (point modules, relay modules, lamps).
7. Indicate desired number of instruction manuals. (One is included with each unit ordered.)
8. Amber lens caps will be supplied on all lamps, unless another color is specified. Standard colors available are amber, red, blue, green and white.
9. Specify the optional Flush Mounting Enclosure if required.

SEEKIRK

Seekirk, Inc.

2420 Scioto Harper Dr.
Columbus, Ohio 43204

Telephone: 614-278-9200 Fax: 614-278-9257

Represented By: