



***DESCRIPTIVE AND INSTALLATION***

***INSTRUCTION MANUAL FOR***

***MODEL A1010 AND A1020 SERIES***

***ANNUNCIATORS***

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### PROPRIETARY NOTICE

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NOTE: Unless otherwise noted, the paragraphs that follow refer to the entire series of A1010 Annunciators. These include: A1010, A1011, A1020, A1021, A1010F, A1011F, A1020F, A1021F.

## 1.0 UNPACKING AND HANDLING

1.1 Immediately upon receipt the packing list should be examined to assure that there is no shortage. The packing list is always an integral part of every shipment and for shipments involving several containers, the one marked "Packing List Enclosed" should be opened first.

1.2 Immediately after unpacking, a visual check should be made with particular attention to the following areas:

- a. Any concealed damage to the enclosure, especially to assure that painted surfaces are free from marks or scratches.
- b. All lens caps and engraved plates to assure that they are securely in place.
- c. All terminal barrier screws to assure that they are properly tightened.
- d. All point and relay modules to assure that they are properly seated.

1.3 If there is physical damage due to improper handling by the carrier, preserve packing container and call the carrier immediately. We will instruct you on how to file a claim. After notifying the carrier, Seekirk, Inc., should be informed as to the specific equipment and extent of damage. This will insure proper repair or scheduling of replacement equipment prior to setting the claim with the carrier. always include as much information as possible to avoid undue delays and identify with your purchase order number, Seekirk's internal SOR number, and Serial Number, (see packing list). Any claim for shortage, defects, or errors in shipment must be made in writing and within ten days after receipt of goods.

## 2.0 GENERAL DESCRIPTION

2.1 All A1010 Series Annunciators are of a mother board construction consisting of a terminal barrier, plug-in point modules all of which are mounted on either a wall or flush mountable chassis. A cover plate, suitable for hand lettering or the fixing of engraved legends on appropriate locations, or fixed above the point and relay modules and supported by slots located at each end of the chassis. The cover plate is further supported by two fasteners at top and bottom. To remove these; first depress the two small ears located on opposite sides, then pull upward and out of the cover plate. The latter can then be easily removed by pulling outwards at the center.

2.2 These units will come completely assembled with the specified amount of point and relay modules in place. Check the packing list to assure that the correct modules are present (see 2.3). If the annunciator were ordered as a complete unit, in all cases there will be (11) modules present. The series A1010, A1010F, A1020 and A1020F will contain ten (10) point modules from top down and one (1) relay module in the bottom most position. The series A1011, A1011F, A1021 and A1021F units will contain nine (9) point modules located from the two position to number ten position. The top and bottom most positions will be relay modules.

2.3 The point module numbering system for the A1010 Series will always consist of a four digit number with either a two or three letter suffix. In all cases the first three digits will be 913. The fourth digit will be a 2, 3, or 4 depending upon whether it is a 24, 48, or 125VDC module, respectfully. The first suffix letter will always be a B, whereas for those modules with only two suffix letters, the second letter can be either an A or B. An A signifies that the module is to be used in conjunction with a close to alarm customer input contact, a B likewise signifies that the custom input contact will open to alarm. Where three suffix letters are used, the second letter must be an A (close to alarm) and in all cases, the third letter will be an F. This signifies that the this particular module has reflash capability. An example would be 9134BAF. This is a 125VDC point module which will operate with a close to alarm customer field contact and it has the "reflash" capability. See para. 7.0 for "reflash" module discussion.

2.4 The relay module numbering system is similar to that of the point module in that it consist of four (4) digits followed by either two (2) or three (3) suffix letters. The first three digits will always be 913. Like the point module, the fourth number will be either a 2, 3 or 4, depending upon whether the voltage is 24, 48 or 125VDC, respectfully. The first suffix letter is always a Z, and the second suffix letter will be either a D, or E; a normally open output contact or normally closed output contact, respectfully. The third letter if it exists will be an F which indicates that the relay module has "reflash" capability. Atypical relay module number is 9133ZD. This is a 48VDC relay module with one normally open output contact.

2.5 The A1010 Series annunciators may be ordered to contain a mixture of normally open or normally closed point modules, as long as the following rules apply:

- a. All modules must be of the same voltage.
- b. Non-reflash modules must not be mixed with reflash type modules. This is true in the case of both point and relay modules; i.e., a 9134BAF "reflash" point module must be used in conjunction with a 9134ZDF "reflash" relay module.

### 3.0 MECHANICAL INSTALLATION

3.1 Depending upon the customer requirements, the A1010 Series Annunciators will be supplied with a wall mount chassis or a flush mount chassis.

#### Wall Mount Chassis

The annunciator can be mounted to any flat surface by means of four 1/4 inch diameter screws on 4-1/16" wide by 13-1/2 centers. The details of this chassis are shown on all A1010 Series customer drawings.

#### Flush Mount Chassis

Flush mounted units are installed by mounting the annunciator through a 12-1/8"H x 5-3/4"W panel cutout, and securing by means of four #8 screws through the 11-5/8"H x 5-7/8"W holes located on the chassis flange. Securing may also be accomplished via four "optional" J-bolts through the 1/4" hole knockouts located on the chassis sides. There will be an additional charge if the J-bolts are to be supplied. See drawing # 02B100821 included as part of this manual.

### 4.0 ELECTRICAL INSTALLATION - GENERAL

4.1 A1010, A1010F, A1020 and A1020F annunciators are provided with a 15 position terminal barrier which provides input connections of point one through ten; one pair of auxiliary relay contact connections, R1 and R2; two battery supply connections, + and -; and one common connections, CC. The identity of each screw terminal is marked on the green circuit board supporting the terminal barrier.

4.2 A1011, A1011F, A1021 and A1021F annunciators are provided with 16 position terminal barrier which provides a common positive connection, CC; the top pair of output contacts, R1 and R2; input connections for nine points; bottom pair of output contacts, R3 and R4; and two battery connections, + and -. The identity of each screw terminal is marked on the green circuit board supporting the terminal barrier.

4.3 For further detailed information, installation wiring, annunciator schematic, and other pertinent data, consult the drawings either supplied at the end of the manual, or supplies in addition to the manual as would be the case with the "reflash" versions or specialized annunciators of this series.

## 5.0 FIELD WIRING AND CHECK OUT

**CAUTION:** The following tests are functional. If voltage breakdown tests or installation resistance tests with other than a low voltage ohmmeter are to be performed, all potted modules must be removed from their sockets to prevent possible damage to solid state components and relay contacts.

### CAUTION VOLTAGES DANGEROUS TO LIFE ARE PRESENT WHEN POWER IS APPLIED TO THIS UNIT

5.1 To insure proper operation of the unit, it is good practice to first connect the battery supply to the positive (+) and negative (-) terminals of the annunciator.

5.2 The TEST-REST switch can now be used to check initial operation of modules, lamps and auxiliary output contacts. When testing an A1020, A1020F, A1021 or A1021F annunciator make sure that each of the individual auxiliary output contact cutoff switches are in the up position.

5.3 The auxiliary contact(s) can now be wired in and the TEST-RESET switch used to check operation sequence.

5.4 finally, wire in the individual points as required for the particular installation. To do this the "CC" should be wired common to all of the customer contacts of which their opposite sides can then be individually connected to the input terminals. When wiring is complete, a point by point check should be performed at each point to insure no wiring errors have occurred. Operation should be in accordance with sequence chart which is part of this manual.

## 6.0 CIRCUIT DESCRIPTION (GENERAL)

6.1 The main chassis assembly service to provide the following:

- a. Mechanical support for the indicator lamps, point and relay modules, switches-operator's and cutoff, and input connections.
- b. The inter-connection circuitry between the individual modules and the monitoring system. Circuit inter-connection is shown schematically on the drawings located at the end of this manual.
- c. Reverse polarity protection by a single diode in series with the positive lead.
- d. Relay Module sequence selection by a jumper from a common center point to either of two positions marked B or C. NOTE: With the reflash version annunciators, this jumper must be left in the b position.
- e. A test function by actuation the operator's switch to the TEST position which applies plus voltage to pin D of all point modules. This simulates an alarm input to each module.

f. A reset function by actuation the operator's which to the RESET position which removes plus voltage to pins A and F of all point modules allowing them to reset. If points previously in alarm are still in alarm during "reset" , the modules will again turn on when the operator;s switch is released.

g. An auxiliary output contact cutoff switch per point for the A1020, A1020F, A1021 and A1021F series annunciators. Each individual switch when placed in the down position will prohibit the relay module from being energized via an output to its associated point module. The operation of the lamp or any other point module will not be affected.

6.2 The POINT MODULE circuit description for the A1010, A1011, A1020 and A1021 series annunciators is as follows (refer to your specific series overall schematic and wiring diagram for details):

a. In a close to alarm situation (refer to module Dwg. #05A100557) a high voltage level is present on the input terminal (Finger F) connected to D1, long enough to energize RY1 thus closing the RY1 contact. RY2 relay will then energize thus closing both lamp indication and the closing of RY2 latching contact. In addition, the input signal will combined with diode logic, allow a high logic at jumper point C and a negative battery potential on Finger C of the Relay Module. This allows RY1 of the Relay Module to energize. As long as an alarm condition exists, the lamp cannot reset.

When the alarm condition returns to normal, RY1 will de-energize thus opening RY1 contact. The lamp will remain energized until the annunciator is RESET.

b. In an open alarm situation (refer to Dwg. # 05A100558) RY1 will de-energize thus closing the RY1 contact. From this point on the operation identical to that of the normally open point module explained above.

6.3 The RELAY MODULE circuit description for the A1010, A1011, A1020 and A1021 annunciators are as follows (refer to your specific series overall schematic and wiring diagram for details):

The Relay Module will be energized via a high level voltage on Finger A upon the alarming of any point module. Either a normally-open or normally-closed output contact will be supplied depending upon the customer specification. After energization depending upon the selected sequence (B or C), the following will happen:

a. "B" Sequence

The relay module will remain energized until the alarm conditions clears and the annunciator is RESET.

b. "C" Sequence

The relay module remain energized until the alarm condition clears.

For more information see Para. 7.0 - SEQUENCE CHART.

6.4 The POINT MODULE circuit description for the A1010F, A1011F, A1020F and A1021F is as follows (refer to your specific series overall schematic and wiring diagram for details):

NOTE: In order for the above mentioned "reflash" version annunciators to perform as discussed in the following paragraphs, the sequence jumper located at the bottom of the mother board must be left in the "B" position.

a. In a close to alarm situation (refer to Dwg. # 05A101517) a high voltage level is present on the input terminal (Finger F) connected to D1, long enough to energize RY1 thus closing the RY1 contact. RY2 relay will then energize thus allowing both lamp indication and the closing of RY2 latching contact. In addition, negative battery potential on Finger C of the Relay Module. This allows Ry1 of the Relay Module to energize. As long as an alarm condition exists, the lamp cannot be reset.

If a second or third, etc. alarm occurs before the first alarm has cleared, a similar pattern of events will result as discussed above except for the following differences:

Upon the alarm initiation, a high positive logic pulse will occur at finger E of the point module via R3 and C3. This pulse will enter the relay module through finger D and enable the SCR via R2. the SCR will fire momentarily until the voltage potential across C1 reaches its maximum and turns off the SCR. During this cycle RY1 will DE-energize for approximately 200 milli-seconds thus causing its contact to open and re-close.

When all the alarm conditions return to normal, RY1 contact of the point module will de-energize thus opening RY1 contact. The lamp will remain energized until the annunciator is RESET.

6.6 The RELAY MODULE circuit description for the A1010F, A1011F, A1020F and A1021F "reflash" annunciators are as follows (refer to your specific series overall schematic and wiring diagram for details):

The RELAY MODULE (refer to Dwg. module # 05A101518) will be energized via negative (OV) potential on Finger C upon the alarming of any point. A second alarm condition will cause the relay (RY1) to momentarily de-energize and re-energize.

7.0 SEQUENCE CHART

<b>A1010/A1011/A1010F/A1011F - SEQUENCE B (NOTE 1)</b>		
<b>ALARM STATUS</b>	<b>VISUAL</b>	<b>RELAY MODULE</b>
NORMAL	OFF	DE-ENERGIZED
ALARM STATUS	ON	ENERGIZED
ALARM R.T.N.	ON	ENERGIZED
RESET	OFF	DE-ENERGIZED
TEST	ON	ENERGIZED
RESET	OFF	DE-ENERGIZED

<b>A1010/A1011 - SEQUENCE C (NOTE 2)</b>		
<b>ALARM STATUS</b>	<b>VISUAL</b>	<b>RELAY MODULE</b>
NORMAL	OFF	DE-ENERGIZED
ALARM STATUS	ON	ENERGIZED
ALARM R.T.N.	ON	DE-ENERGIZED
RESET	OFF	DE-ENERGIZED
TEST	ON	ENERGIZED
RESET	OFF	DE-ENERGIZED

<b>A1020/A1021/1020F/A1021F - SEQUENCE B NOTE 1)</b>		
<b>ALARM STATUS</b>	<b>VISUAL</b>	<b>RELAY MODULE</b>
NORMAL	OFF	DE-ENERGIZED
ALARM STATUS	ON	ENERGIZED
ALARM R.T.N.	ON	ENERGIZED
RESET	OFF	DE-ENERGIZED
TEST	ON	ENERGIZED
RESET	OFF	DE-ENERGIZED

<b>A1020/A1021 - SEQUENCE C (NOTE 2)</b>		
<b>ALARM STATUS</b>	<b>VISUAL</b>	<b>RELAY MODULE (w/CUTOUT SW UP)</b>
NORMAL	OFF	DE-ENERGIZED
ALARM STATUS	ON	ENERGIZED
ALARM R.T.N.	ON	DE-ENERGIZED
RESET	OFF	DE-ENERGIZED
TEST	ON	ENERGIZED
RESET	OFF	DE-ENERGIZED

NOTE 1: With all of the "reflash" versions of the series, ie., the "F" suffix option; when a second, third, etc. alarm occurs before reset, the relay module contact will de-energize momentarily and re-energize. Once all of the alarms have cleared, the relay module can then be reset.

NOTE 2: The "Sequence C" option is not available with the "reflash" versions of this annunciator.

## 8.0 MAINTENANCE

8.1 No preventive maintenance is required by the equipment. Should a failure occur, analysis and repair of the problem can be accomplished by the removal of suspected faulty modules and their replacement with spare modules known to be good.

It is recommended and good practice to have available spare modules of such repair even though failures are infrequent.

## 9.0 SPARE PARTS LIST

9.1 The following list of spare parts is considered adequate for field maintenance. If further information is required, contact the factory or your nearest Seekirk annunciator representative.

- a. One normally open (N.O.) or normally closed (N.C.) POINT MODULE, depending upon type ordered with unit.
- b. One (N.O.) or (N.C.) RELAY MODULE.
- c. Ten spare LAMPS.

## 10.0 WARRANTY

10.1 Seekirk warrants that the apparatus delivered will be of kind and quality described in the order or 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 replacement, freight paid by customer both ways shall constitute a fulfillment of all Seekirk liabilities in respect to said apparatus. In no event shall Seekirk be liable for consequential damage.

## 11.0 DRAWINGS

11.1 The following drawings are considered to be standard, and included as part of this information manual.

<u>DRAWING NUMBER</u>	<u>DESCRIPTION</u>
02D100528	SERIES A1010 ANNUNCIATOR
02D100652	SERIES A1011 ANNUNCIATOR
02D100635	SERIES A1020 ANNUNCIATOR
02D101016	SERIES A1021 ANNUNCIATOR
02B100821	FLUSH MOUNT CHASSIS OUTLINE & DIMENSIONS

<u>DRAWING NUMBER</u>	<u>DESCRIPTION</u>
02D300348	A1010F SERIES ANNUNCIATOR
02D300473	A1011F SERIES ANNUNCIATOR

## 12.0 APPLICATION

12.1 Field precautions when utilizing auxiliary contact.

1. Contact Rating (Resistive Load)  
Max. Watts Dc.....15 Watts DC  
Max. Amperes DC.....2.0 Amps DC  
Max. Volts DC.....250 Volt DC

Example:

For 50VDC load, Max. I = .3 Amps  
For 130VDC load, Max. I = .115 Amps

2. Contact Protection

R1 should be connected in series with the contact to reduce the current surge for lamp or capacitive loads. For inductive load, such as Relay or Bell, D1 should be connected in parallel with the load, with cathode pointed to +, for inductive transient voltage suppression.

D1 must have a reverse breakdown rating in excess of maximum battery transient voltage. The forward current rating of D1 should be in excess of the normal load current of the device(s) being suppressed.