SCADA 3000
ANNUNCIATOR MODULE

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IMPORTANT SAFETY INSTRUCTIONS

Your ANNUNCIATOR MODULE has been carefully designed to give you years of safe, reliable performance. As with all electrical equipment, however, there are a few basic precautions you should take to avoid hurting yourself or damaging the unit:

•Read the installation and operating instructions in this manual carefully. Be sure to save it for future reference.

•Read and follow all warning and instruction labels on the product itself.

•To protect the Annunciator Module from overheating, make sure all openings on the unit are not blocked. Do not place on or near a heat source, such as a radiator or heat register.

•Do not use your Annunciator Module near water, or spill liquid of any kind into it.

•Be certain that your power source matches the rating listed in the specification section of this manual. If you're not sure of the type of power supply to your facility, consult your dealer or local power company.

•Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.

•Do not overload wall outlets and extension cords, as this can result in the risk of fire or electric shock.

•Never push objects of any kind into this product through ventilation holes as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock.

•To reduce the risk of electric shock, do not disassemble this product, but return it to Phonetics' Customer Service, or another approved repair facility, when any service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the unit is subsequently used.

•If anything happens that indicates that your Annunciator Module is not working properly or has been damaged, disconnect it immediately and follow the procedures in the manual for having it serviced. Return the unit for servicing under the following conditions:

  1. Liquid has been spilled into the product or it has been exposed to water.

  2. The unit has been dropped, or the enclosure is damaged.

  3. The unit doesn't function normally when you're following the operating instructions.

FCC Requirements

Part 15: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Contents

Introduction

The SCADA 3000 Annunciator Module is an optional component for use with the SCADA 3000 system. The module provides 8 programmable LED indicators to display the status of assigned I/O points. The LEDs are bi-color (red/amber), which means that each LED is always on, thereby preventing a false reading due to a burned-out LED. Red indicates an active or ON condition and Amber indicates an inactive or OFF condition. The Annunciator LEDs appear as two-state (ON/OFF) outputs in the SCADA 3000 software. The Annunciator module is housed in a $1/8$ DIN enclosure for convenient panel mounting.

Technical Support

If any questions arise upon installation or operation of the Annunciator Module, please contact Phonetics Customer Service Department at the number shown below and have the following information:

- Date of purchase   _____
- Serial number   _____

Technical support is available from 8:00 AM to 5:00 PM, EST.

You can also contact technical support at any time via e-mail at: support@sensaphone.com

Phonetics, Inc.
901 Tryens Road
Aston, PA 19014
Phone: (610)558-2700
FAX: (610)558-0222
www.sensaphone.com

Installation

This chapter provides information necessary to install the Annunciator Module. Correctly installing the unit will ensure proper functioning and maximum service life. Please read the entire chapter before attempting installation.

OPERATING ENVIRONMENT

The Annunciator Module should be mounted and operated in a clean, dry and safe environment. Do not mount the unit where it will be subject to shock and vibration. Do not mount the unit where it will be subject to dirt, dust or moisture. Ideally the unit would be mounted in a steel or a fiberglass NEMA-4 enclosure. Do not mount the unit or the expansion modules close to motor starters, contactors or relays that switch inductive loads. These devices generate large electromagnetic fields that can cause the Annunciator Module to malfunction. Where this is unavoidable, mount the module(s) and main unit in a separate, grounded, steel enclosure. This will shield them from harmful electrical interference.

The temperature range the Annunciator Module can operate in is 32°F to 158°F (0°C to 70°C). If you require Annunciator Module to operate in a below freezing environment, you must take safe and practical measures to keep the module's temperature above 32°F or it will not operate reliably.

CAUTION: The Annunciator Module is a sensitive electronic device. Personnel and work area should be grounded before handling this device. Do not install a SCADA 3000 system near any strong electrostatic, electromagnetic, magnetic or radioactive fields. Do not expose it to fumes or corrosive vapors.

MOUNTING THE ANNUNCIATOR MODULE

The Annunciator Module is packaged in a standard ⅛ DIN enclosure. This style of enclosure is designed to be flush-mounted in a panel or door. The module includes all the hardware necessary for mounting; however, a small Allen wrench will be required to secure the enclosure to the panel. To mount the module, cut a hole in the panel according to the dimensions shown in Figure 1 below.
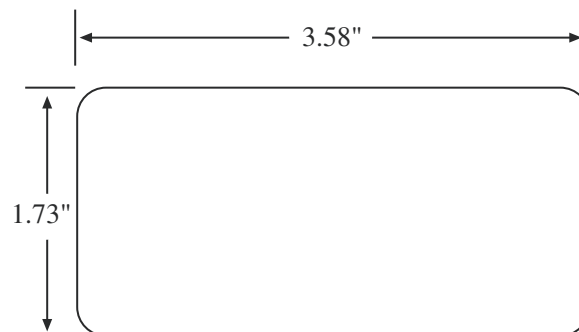

Figure 1: Module Mounting Dimensions

Remove the two Allen screws on the back of the enclosure and slide out the locking side panels. Insert the module into the hole in the panel and slide it back until the front bezel is flush with

the panel. Re-install the locking side panels and tighten the Allen screws to secure the enclosure to the panel. See Figure 2 below.
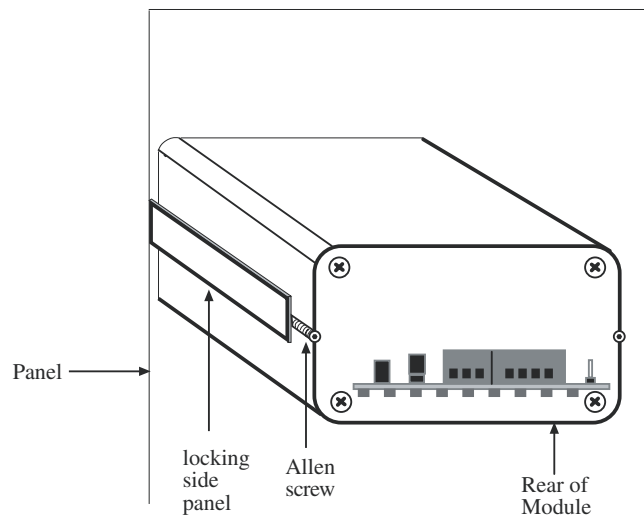

Figure 2: Rear view of mounted annunciator module

Labeling

The Annunciator Module comes with a blank label on the front on which you can write a description to identify each light—such as the corresponding alarm or output. We include additional blank labels for your convenience.

POWER SUPPLY AND GROUNDING

The Annunciator Module operates on 10-15VDC. Typically the module is powered from the AUX PWR terminals on the SCADA 3000 main unit. This is preferred because the AUX PWR from the main unit is battery-backed in the event of a power failure, when a battery is connected to the main unit. Alternately, you may connect the module to any 10-15VDC power source. The module requires 1.5 Watts of power. See Figure 3.
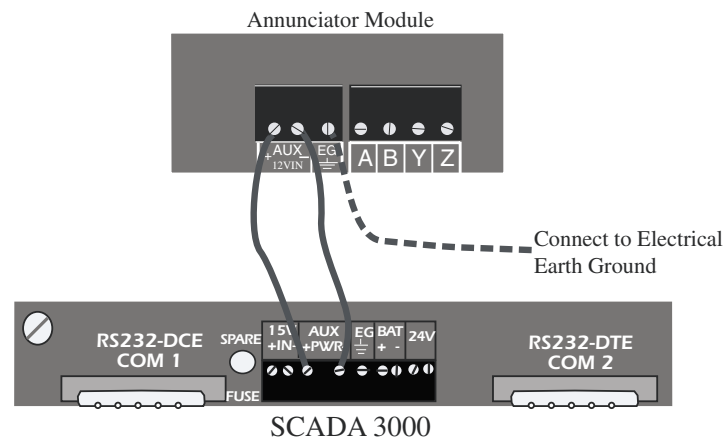

Figure 3: Annunciator Module connected to the SCADA 3000

It is extremely important that the EG pin be connected to a good earth ground. This will prevent communication errors due to differences in ground potential between modules in addition to possible damage due to voltage transients and surges.

COMMUNICATIONS WIRING

The Annunciator Module communicates with the SCADA 3000 using a high-speed serial communications bus. This 4-wire bus is used to connect up to 15 modules to the main unit to provide additional inputs and/or outputs. Perform all wiring with power to the main unit and modules turned off.

Modules may be located a maximum of 2000' away from the main unit and should be connected in a daisy-chain fashion from one module to the next. Each module connects to the next via a 4-wire communications cable connected to the terminals labeled **A,B, Z** & **Y**. The cable must be **4-Conductor Twisted Pair** (shielded or unshielded) with a nominal impedance of 120Ω (for example, Belden #8132 or 9842 cable). Use one pair for A & B and the other pair for Z & Y. The proper wiring from the main unit to the modules, and from module to module, is shown in Figure 3:
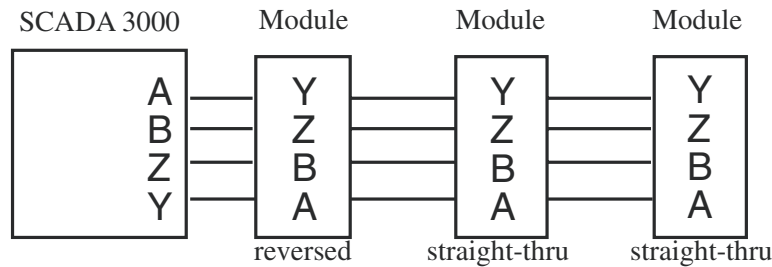
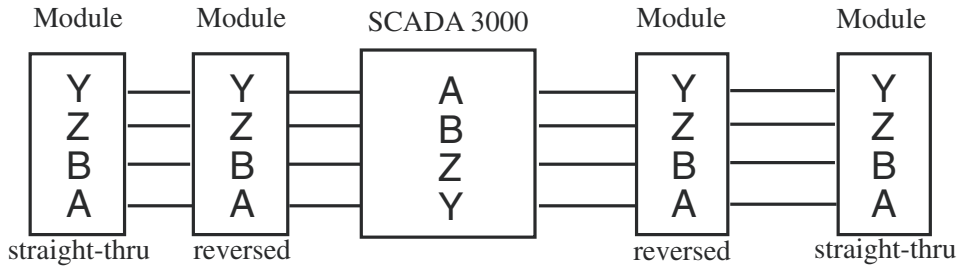Figure 3: **Correct** daisy chain setup: Main unit on the end.

Figure 4: **Incorrect** daisy chain setup: Main unit in the middle of the chain.

The Main Unit should always be on one end of the chain, never in the middle.

Each module must be configured with its own **unique** address using the BUS ADDRESS jumpers. You may mix & match up to 15 modules to suit your application's requirements. The example below shows a Bus Address setting of 9.

Address	Jumper Code
1	A B B B
2	B A B B
3	A A B B
4	B B A B
5	A B A B
6	B A A B
7	A A A B
8	B B B A
9	**A B B A**
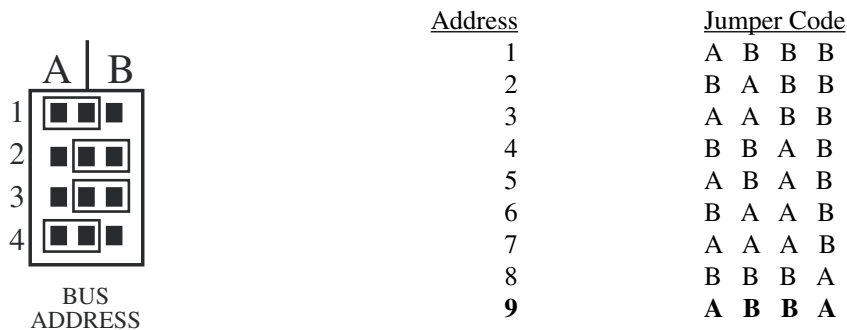
10	B	A	B	A
11	A	A	B	A
12	B	B	A	A
13	A	B	A	A
14	B	A	A	A
15	A	A	A	A

Figure 5: Setting the Bus Address

Bus Termination

Located on each module is a jumper labeled BUS TERM. This jumper is used to terminate the 4-wire communications bus.
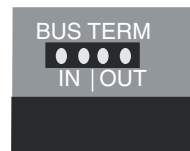

Figure 6: Bus Termination jumper

Termination is required at the extreme ends of the communications network to minimize signal reflections that would otherwise cause data communication errors. To activate the Bus Termination, move the jumper to the IN position. Note that this should only be activated if the module is at the very end of the network. All other modules in between should have the termination set to the OUT position. As a result, only 1 module should ever have the termination activated. The diagram below illustrates proper termination of the communications bus.
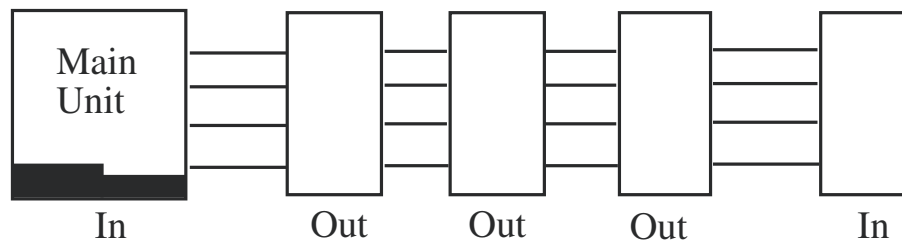

Figure 7: Correct bus termination

How the Annunciator Module Works

The Annunciator module appears as an output module to the SCADA 3000. When the system is powered up, the main unit will scan the external module network and add the Annunciator to its list of modules at the address specified by the Bus Address jumpers. An icon for the Annunciator will also appear on the main unit screen.

The Annunciator module provides eight LED indicators which can be used to display the status of I/O points, system variables, or alarm conditions. The LEDs can be forced on (Red) or off (Amber) through the Annunciator module programming screen, or they may be controlled automatically using a C-program or Ladder program. The eight LEDs appear in the programming software as digital outputs numbered from 0-7. To access the Annunciator programming screen, click on the Annunciator icon from the Main Unit form or select Modules, then Annunciator, from the main menu.

Appendix A: Specifications

Network Data Rate:	153.6 Kbps
Bus Termination Impedance:	120 Ohms
Power Requirements:	l0-l5VDC l00mA (typical) l.5W (typical)
Power Fuse Rating & type:	500mA 250V, Size TR-5 (Wickmann # 3721400041)
Operating temperature:	0 to 70 degrees Celsius (32 to 158 degrees F)
StorageTemperature:	-20 to 70 degrees Celsius (-4 to 158 degrees F)
Humidity	5 to 90% non-condensing
Dimensions:	3.8" x 1.85" x 5.6"
Weight:	0.75 lbs.
Enclosure:	⅛ DIN Aluminum Housing with locking side panels for panel installation.

Appendix B: Returning Module for Service

In the event that the Annunciator Module does not function properly, we suggest that you do the following:

1) Record your observations regarding the Annunciator Module malfunction.

2) Call the Customer Service Department at (610)558-2700 prior to sending the unit to Phonetics for repair.

If the module must be sent to Phonetics for Servicing, please do the following:

1) Disconnect all wiring and unplug the unit.

   Note that the terminal blocks can be unplugged from the unit to maintain your input wiring.

2) Carefully pack the module to avoid damage in transit. Use the original container (if available) or a sturdy shipping box.

3) You must include the following information to avoid shipping delays:

   a) Your name, address and telephone number.

   b) A note explaining the problem.

4) Ship your package to the address below:

   SERVICE DEPARTMENT

   Phonetics Inc.

   901 Tryens Road

   Aston, PA 19014

5) Ship prepaid and insured via UPS or US Mail to ensure a traceable shipment with recourse for damage or replacement.

Important Information for Canadian Customers

In the event that your Sensaphone SCADA 3000 unit does not function properly, Canadian customers have the option of shipping the unit to one of the following Phonetics-authorized Canadian Repair facilities:

Microwise Computer Systems
100 Covington Crescent
Kitchener, Ontario N2N 2X3
(519) 744-9892

G.A.S. Analytical Systems, Ltd.
Head Office
Bay V, 1338 36 Avenue NE
Calgary, Alberta T2E 6T6
(403) 253-6576

Please record your observations regarding the unit's malfunction and follow the procedures outlined on the previous page.

For Technical Support questions, you may call Phonetics Technical Service Department at (610) 558-2700, or by E-mail at support@sensaphone.com.

3 YEAR LIMITED WARRANTY

1. **WARRANTOR:** Dealer, Distributor, Manufacturer

2. **ELEMENTS OF WARRANTY:** This Product is warranted to be free from defects in materials and craftsmanship with only the limitations and exclusions set out below.

3. **WARRANTY AND REMEDY: Three-Year Warranty** — In the event that the Product does not conform to this warranty at any time during the time of three years from original purchase, warrantor will repair the defect and return it to you at no charge

This warranty shall terminate and be of no further effect at the time the Product is (1) damaged by extraneous cause such as fire, water, lightning, etc. or not maintained as reasonable and necessary; (2) modified; (3) improperly installed; (4) repaired by some-one other than warrantor; (5) used in a manner or purpose for which the Product was not intended; or (6) sold by original purchaser.

WARRANTORS' OBLIGATION UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT. THIS WARRANTY DOES NOT COVER PAYMENT OR PROVIDE FOR THE REIMBURSEMENT OF PAYMENT OF INCIDENTAL OR CON-SEQUENTIAL DAMAGES.

It must be clear that the warrantors are not insuring your premises or guaranteeing that there will not be damage to your person or property if you use this Product. The warrantors shall not be liable under any circumstances for damage to your person or property or some other person or that person's property by reason of the sale of this product or its failure to operate in the manner in which it is designed. The warrantors' liability, if any, shall be limited to the original cost of the Product. The warrantors assume no liability for installation of the Product and/or interruptions of the service due to strikes, riots, floods, fire, and/or any cause beyond Seller's control.

4. **PROCEDURE FOR OBTAINING PERFORMANCE OF WARRANTY:** In the event that the Product does not conform to this warranty, the Product should be shipped or delivered freight prepaid to a warrantor with evidence of original purchase.

5. **LEGAL REMEDIES:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state to the extent allowed by law expressly in lieu of any other express or implied warranty, condition, or guarantee.

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