

# Seekirk

## *Model A1700 Series Annunciator*

### Applications:

For usage in all types of process industries, electric generation, transmission and distribution, gas and water utilities.

### Features:

The Seekirk model A1700 is a MODBUS/DNP outstation window type annunciator offering a wide range of configurations presented to the user.



- ▶ The A1700 can be configured to allow from one to four alarm points per window module and with up to 256 alarm points per unit in the MODBUS mode and 128 alarms points per unit in the DNP mode.
- ▶ The A1700 supports both Modbus and DNP 3.0 (IEEE Std™ 1815-2012) protocols.
- ▶ Modbus/DNP EIA-485/EIA-232 communication port is auto-selected upon initial reception of data from the master.
- ▶ The A1700 accepts alarm inputs from either the serial input as MODBUS/DNP (CROB) commands or from hardwired alarm inputs via the rear panel terminals. In the event of loss of communications, the unit can function as a stand-alone annunciator.
- ▶ The A1700 DNP alarm sequence event buffer can store up to 512 time-stamped alarm events. In the event of a loss of power, the DNP time-stamped alarm events are stored in EEPROM to allow for later retrieval.
- ▶ To provide a contiguous DNP point index range, virtual device addressing is employed. Separate addresses are assigned to the alarm in, alarm return to normal, alarm acknowledged and alarm reset events.
- ▶ The A1700 can be configured for the reporting of unsolicited (DNP) alarm events on a per point basis.
- ▶ Grouping of alarms by assigning of class (DNP Assign Class) 1, 2, or 3 to each alarm point.
- ▶ The A1700 configuration settings can be modified via the HMI control panel (either by manual entry or by serial connection to a laptop utilizing Seekirk's Java based GUI) or on a per factory request, the configuration settings can be setup at the factory for the customer.
- ▶ For ease of maintenance, all circuit cards are plug-in and accessible from the front of the unit. The power supplies are integral to the unit and sectionalized within the unit to provide maximum reliability.
- ▶ Local EIA-232 port available for use by either a printer or PC terminal for the display of alarm event information such as the point number, alarm condition, UTC and time and date.

## Specifications

### AC Power:

**Voltage input range-** 110 or 220 VAC.

### DC Power:

**Voltage input range-** 24, 48, 125 or 250 VDC.

### Field Contact Input:

**Input voltage range-** 24 to 250 VDC or 18 to 220VAC.

**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.

### **Programmable Configuration per Point:**

- 1) NO or NC field contact input.
- 2) Enable or disable input.
- 3) Input delay – 10ms to 150ms.
- 4) Block or unblock alarm/common relay.

### Alarm Sequences (ISA Standard):

#### **Programmable Configuration:**

- 1) D (A), K (M), N (F2A), P (F2M), S (F3A) and T (F3M).
- 2) Contact factory for additional or special sequences.

### Display:

Standard – 28MB incandescent lamps.

Optional – LED; red, amber, green, blue and white.

Legends – engraved windows.

### Auxiliary Relay Ratings:

**Max. switching voltage-** 200 VDC.

**Max. switching current-** 1.0Amps.

**Max. power rating-** 10 VA.

**Relay type-** SPST.

#### **Programmable Configuration per Point:**

- 1) N.O. or N.C. contacts.
- 2) Follow the field contact or alarm sequence.

### Alarm/Common Relay Ratings:

**Max. switching current-** 2.0 Amps @ 28 VDC. 1.0Amp @ 120 VAC.

**Relay type-** SPDT.

#### **Programmable Configuration:**

- 1) N.O. or N.C. contact.
- 2) Enable or disable.
- 3) Re-flash
- 4) Pulse 1-15 seconds.

### Audible – Internal:

**Sound level-** 75dB @ 2ft (61cm)

#### **Programmable Configuration:**

- 1) Enable or disable.

### Serial Communication:

**Baud rate selection-** 1200, 2400, 4800, 9600, 19200, 38400, or 57600.

**Parity selection-** no, odd, or even parity.

**EIA (RS)-485-** Half duplex.

**EIA (RS)-232 Handshaking signals-** Full duplex with CTS, RTS, and XON/XOFF (modbus only).

#### **EIA (RS)-232-DB9 style female connector pin out:**

Pin 2 - Serial data in.

Pin 3 - Serial data out.

Pin 5 - Signal ground.

Pin 7 - Request to send (RTS).

Pin 8 – Clear to send (CTS).

### Printer Serial Communication (DNP Only):

**Baud rate selection -** 9600.

**Parity selection -** no parity.

**Data Format –** 8-bit 1-stop, ASCII.

**EIA (RS)-232 Handshaking signals-** Full duplex with CTS, RTS, and XON/XOFF.

#### **EIA (RS)-232-DB9 style female connector pin out:**

Pin 2 - Serial data in.

Pin 3 - Serial data out.

Pin 5 - Signal ground.

Pin 7 - Request to send (RTS).

Pin 8 – Clear to send (CTS).

#### **Programmable Configuration:**

- 1) Enable or disable printer.
- 2) Print alarm history.

### Mechanical:

#### **Mounting and Enclosures -**

Flush mounting is standard for the A1700. Optional 19” or 24” rack mount plates are available. Optional NEMA 4 or NEMA 12; wall, flush or special mounting. Consult factory for details.

#### **Connections – Input/Output/Power**

P.C. board mounted feed through barrier terminal block, with #6 screws suitable for #12 AWG wires.

#### **Connections – Modbus/DNP Communication**

EIA-232 - 9 pin female D type connector.

EIA-485 – P.C. board mounted 2 - position Euro terminal block. Accept #26 to #16 AWG wires.

#### **Power Rating per Module:**

Max. 6.0 watts @ input voltage, incandescent lamps.

Max. 2.9 watts @ input voltage, LED lamps.

### Operating Temperature and Humidity Range:

**Standard Range:** 32 to 158 degrees F. (0 to 70 degrees C). 0-90% RH, non-condensing.

**Optional Range:** -40 to 185 degrees F (-40 to 85 degrees C). 0-90% RH, non-condensing.

# Dimensional Information and Wiring Hookup

**Number of 3"x3" Modules High or Wide**

Number of 3"x3" Modules High or Wide	Overall Dimensions (Inches)	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"

**Module Components (Front)**

CONTROL SWITCHES: TEST, AIR, RESET

BEZEL & LAMP UNIT TYPES: SINGLE (A), DUAL (A, B), TRIPLE (A, B, C), QUAD (A, B, C, D)

LETTERS WITHIN WINDOWS INDICATE WINDOW AND REAR TERMINAL RELATIONSHIPS

CARD LOCATIONS (FRONT VIEW, BEZEL REMOVED)

POINT MODULE: 1-5 (1-4 are possible power supply cards)

PUSHBUTTON/RELAY MODULES: 1-5 (1 is MASTER COMM. CONTROLLER, 2 is POINT SEQUENCER CARD, 3-5 are RELAY CARDS)

Terminal card configuration for either single or dual points per window with alarm card or alarm card with pushbutton panel.

Terminal card configuration for triple or quad points per window. Alarm card is not available in this configuration.

**Terminal Connection Definitions:**

- F.C. COM. .... Provides source voltage to external field contact.
- F.C. A/B/C/D ..... Input from an external field contact. A change in the status of the external field contact will initiate an alarm sequence in the point sequencer card for that alarm point.
- AUX RLY POINT A/B/C/D - Auxiliary relay associated with their respective field contact input, F.C. A/B/C/D. The auxiliary relay will change contact status upon a change in the status of their respective field contact input.

# Window Engraving Information

STANDARD ENGRAVING INFORMATION

Use of one letter size for all windows is recommended. Other letter sizes are available. Use of letters smaller than 3/16" is not recommended due to poorer readability.

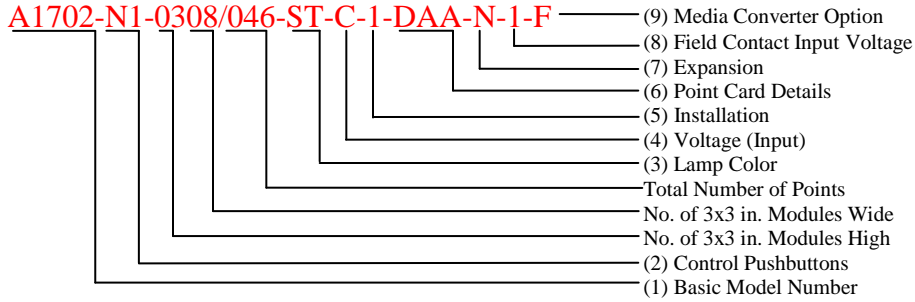
Letter height, inches

Characters and spaces per line

Lines per window

Other window and bezel colors are available. Consult factory for details.

**Ordering and Specifying Information:**



**(1) Basic Model Number: (Window Size)**

- A1701 – 1 Point/Module – 3.0”H x 3.0”W
- A1702 – 2 Points/Module – 1.5”H x 3.0”W
- A1703 – 3 Points/Module – 1.0”H x 3.0”W
- A1704 – 4 Points/Module – 1.5”H x 1.5”W

**(2) Control Pushbuttons:**

- Location** \_\_\_\_\_ **N2**
- N – Integral
  - X – External – Specify style and part or model number if Seekirk is to supply.

- Types** \_\_\_\_\_
- 1- TEST, ACK
  - 2 - TEST, ACK, RESET
  - 3 - TEST, ACK, Horn Silence
  - 4 - TEST, ACK, RESET, Horn Silence
  - 5 - TEST, ACK, RESET, First In Reset
  - 6 - TEST, ACK, RESET, First In Reset, Horn Silence.

**(3) Lamp Color:**

- ST – Incandescent - Clear – Standard.
- AM – LED - Amber
- RD – LED – Red
- GN – LED - Green
- WT – LED - White
- MX – LED - Mixed, Specify Placement.

**(4) Voltage (Input):**

- B - 48 VDC
- C – 125 VDC
- D – 120 VAC 60Hz
- E – 18 VAC 60Hz
- F – 24 VDC
- G – 230VAC 60 Hz
- H – 250 VDC

**(5) Installation:**

- 1 – Flush mount, panel clips supplied (standard).
- 2 – 19” Rack mount.
- 3 – 24” Rack mount.
- 4 – Cabinet required – Specify type/style/size.

**(6) Point Card Details:**

- Sequence (Standard) (Note 1)** \_\_\_\_\_ **DAA**
- D – ISA A
  - K – ISA M
  - N – ISA F2A
  - P – ISA F2M
  - S – ISA F3A
  - T – ISA F3M

**Field Input Contacts: (Note 2 and 3)**

- A – All cards supplied for N.O. contacts.
- B – All cards supplied for N.C. contacts.
- C – Mixed per chart supplied with order.

**Auxiliary Relay Options: (Note 4)**

- A – N.O. contacts.
- B – N.C. contacts.
- C – Mixed per chart supplied with order.
- D – Not required/not applicable.

**(7) Expansion:**

- N – Non-Expandable – A1701 or A1702 max. Expandable up to 2 points/module.
- E – Expandable – A1701-A1704 max. Expandable up to 4 points/module.

**(8) Field Contact Input Voltage:**

- 1 – 24VDC - Standard.
- 2 – Input Voltage (**Restricted to 24VDC, 48VDC, 125VDC and 120VAC Unit Input Voltages Only**).

**(9) Media Converter Option:**

- Blank – None.
- E – Serial to Ethernet Gateway.
- F – Serial to Fiber-Optic Gateway.

**Notes:**

- 1) For additional or special sequences contact Seekirk.
- 2) All field contacts N.O./N.C. selections are configurable via the HMI control panel.
- 3) All auxiliary relay contacts N.O./N.C. selections are configurable via the HMI control panel.
- 4) An “\*” at the end will indicate special requirements is not included in the standard model. Specify details.

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