General Specifications

Introduction of Annunciator

1. GENERAL

SAM IN Annunciator is a device for announding abnormal or changing condition in plant operation. Annunciator usually call attention to abnormal process conditions by the use of individual illuminated visual displays and audible devices.
Annunciator may also be used to show normal process status. Change from one annunciator sequence state to another are caused by changes in process conditions and also by manual operation of pushbuttons. In recent years, the annunciator has SAM IN more important as an alarm or monitoring system.
The complexity of modern process system requires that the operator be alerted to any significant change in the process conditions.
The SAM IN Annunciator system consists of two basic unit.

(1) a Function unit (2) a display unit

It is also divided into two system according to installation of the basic units.

(1) an Integral Logic system : It is installed in two basic units in a cabinet.
(2) a remote Logic system : It is installed with each basic units in a different cabinet.

2. DEFINITION OF TERMS

The following are terms and their definitions that have special meaning in relation to annunciator.

- **Alarm**
  (1) An abnormal process condition.
  (2) The sequence state when an abnormal process condition occurs
  (3) A device that calls attention to the existence of an abnormal process condition.

- **Acknowledge**
  The sequence action that indicates recognition of a new alarm.

- **Auxiliary output**
  An output signal operated by a signal alarm point or group of points which is installed separately from a function unit.

- **Field contact**
  The electrical contact of the device sensing the process condition. The contact is either open or closed.
  (1) Normally open (NO) : A field contact that is open for a normal process condition and closed when the process condition is abnormal.
  (2) Normally closed (NC) : A field contact that is closed for a normal process condition and open when the process condition is abnormal.
  (3) Field contact voltage : The voltage applied to field contacts.

- **Flasher**
  A Device that cause visual displays to turn on and off repeatedly. Types of flashing include fast flashing, slow flashing.

- **Rest**
  The sequence action that returns the sequence to the normal state.
  Types of reset include
  (1) Automatic : Reset occurs after acknowledge when the process condition returns to normal.
  (2) Manual : Reset occurs after acknowledge when the process condition has returned to normal and the reset pushbutton is operated.

• **Test**
An annunciator sequence initiated by operation of the test pushbutton to reveal lamp or circuit failure.
Types of test include :
operation test of the sequence, visual display lamps, audible devices, and pushbuttons.

• **Lamp Test**
Lamp test of the visual display lamps.

3. FEATURE

• **Various selections**
According to a use and establishment of circumstances SAM IN Annunciator can be selected by Engrave Type(80x40), Pilot Type(40x40), LW Type(90x90), MW Type(2"x3"), SW Type(50X40) and Remote Type.

• **Assembly cabinets and windows**
Our product is light since it is assembly aluminium cabinet and the window can be arranged freely.

• **Newly improved high-tech Integrated Circuit Load**
By using HIC our logic circuit become more accurate and decrease cabinet weight and volume.

• **Various types of windows**
There are two types of bulbs for windows : one is a filament and the other is LED, which power consumption is smaller than the filament. Colors are selected orange or red.

• **ISA Standard**
Sequence Logic of our products follows ISA standard.

• **Free Volt Power Source Device**
Our product is not affected by floating voltage in range between AC 85~264V.

• **Ventilation**
Enclosure(cabinet)have a radiation hole for ventilation.

• **Special Alarm Sound & Visible device**
If required various sound and special lamps are available from as follows.
(these products are not produced in our company)
(1) Electronic Sound : Sub train Sound, Sky Lark Sound, Chime Bell Sound, or Pator Car Sound
(2) Visible Style : Ambulance Lamp, Rotary Lamp

• **Mounting Clamps**
Adjustable cabinet mounting clamps can be located four side assembled cabinet. Allows Maximum flexibility for mounting cabinet in difficult installation such ass cubicles or high density panels.

• **Colour**
Cabinet finish is black backed semi-gloss enamel and lamps are produced gray color as a standard.
Other colours are available to meet customer specification.

• **Power Consumption**
The power requirement for each unit described on the proper specification.
In here explain about the way of yielding power consumption of each unit.

$$\text{Power Consumption} = \text{No. of channel} \times \left(\frac{\text{Display Lamp Power}}{} + \frac{\text{Module Power}}{} \right) \text{Load Factor (120 \%)}$$

(Reference)

1. Power Consumption of Filament Bule Display Lamp

- Engrave Type : 1.5 watt ~ 2EA
- Pilot type : 1.5 watt ~ 1EA
- Large Window Type (1s) : 1.5 watt ~ 4EA
- Large Window Type (2s) : 1.5 watt ~ 2EA
- Large Window Type (3s) : 0.4 watt ~ 2EA
- Large Window Type (4s) : 0.4 watt ~ 1EA
- middle Window Type : 1.5 watt 2EA, 4EA

2. Power Consumption of LED Display Lamp

- Engrave Type : 0.4 watt ~ 2EA
- Pilot type : 0.4 watt ~ 1EA
- Large Window Type (1s) : 0.4 watt ~ 4EA
- Large Window Type (2s) : 0.4 watt ~ 2E
- Large Window Type (3s) : 0.4 watt ~ 2EA
- Large Window Type (4s) : 0.4 watt ~ 1EA
- middle Window Type : 0.4 watt ~ 4EA
- small Window Type : 0.4 watt 1EA

3. Module Consumption

- 1 ch : 0.4 watt(Included All System)

4. Load Factor : 120% (Max Load)

• **Power Supply Voltage**

The Standard power supply inputs are AC 85~264V, and DC 24V

4. ANNUNCIATOR FUNCTION

• **Input**

- Dry Contact - Normally Open/Close
- Dry Contact Voltage : DC 24V, DC 48V, DC 110V
- RS485, RS422

• **Output**

- Auxiliary Contacts
  - · Single pole, Selectable NO/NC
  - · Double pole, Selectable NO/NC
- Common Trouble Alarm (CTA) Group Common Trouble Alarm
- Group/select Audible
- Lamp Drive
- RS485

• **Sequences**

- ISA Standard S18.1
- Special Custom Designs
- Multiple Sequences in one chassis

• **Silence stop pushbutton**

A Separate pushbutton is added to allow silencing the alarm audible device without affecting the visual displays.

• **Silence Interlock**

An interlock is added to require operation of the silence pushbutton before alarms can be acknowledged.

• **First Out Rest Interlock**
An interlock is added to require operation of the silence pushbutton before first out alarms can be reset by the first out reset pushbutton.

• **Automatic Alarm silence**
A time delay device is added to silence the alarm audible device after a set time without affecting the visual displays.

• **Automatic Ringback silence**
A time delay device is added to silence the ringback audible device after a set time without affecting the visual displays.

• **Lamp Test**
Operation of the test pushbutton tests the visual displays only.

• **Re - Alarm**
When operator does reset and abnormal point do flashing agin.

5. Square Light (Display Unit)

• E-Type(Engrave Type) : 40(H) x 80(W)mm
• P-Type(Pilot Type) : 40(H) x 40(W)mm
• SW-Type(Small Size Window Type) : 40(H) x 50(W)mm
• MW-Type(Middle Size Window Type) : 50.8(H) x 76.2(W)mm
• LW-Type(Large Size Window Type)
- 1LW : 88(H) x 88(W)mm
- 2LW : 44(H) x 88(W)mm
- 3LW : 29.3(H) x 88(W)mm
- 4LW : 44(H) x 44(W)mm
• O-Type(Other Type)
- 30 : 30(H) x 30(W)mm
- 40 : 30(H) x 40(W)mm
- 60 : 30(H) x 60(W)mm

6. System Enclosures

- Standard Flush - Mounting Type
(NO-Protection)
- Door Type Flush - Mounting Type
(NO-Protection)
- Water Tight Cover Type
(NEMA - 2 , NEMA - 4)
- Water Tight Door Type
(NEMA - 4)
- Rack Mounting Type
(Function unit Type)