USER'S MANUAL

INTEGRATED ALARM SYSTEM

REVISION B

5802-710
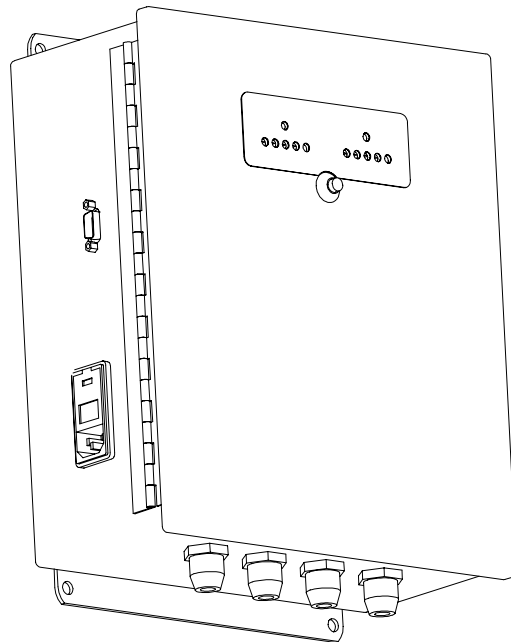
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SECTION 1 – FUNCTIONAL SPECIFICATIONS

1.1   DEFINITION

The Integrated Alarm System (IAS) provides error/caution reporting for any application consisting of the following:

- PA/4000 (error and caution) or PA/5000 (error and caution)
- Ink Jet Series 1 (low ink)
- Ink Jet CIDS (low ink)
- LA/110, LA/130, or LA/140 (broken web and low label)
- Auxiliary photocell #1 (function undefined)
- Auxiliary photocell #2 (function undefined)
- Bad/good read scanner feature (requires DC I/O module)
- PA/150 (error and caution, requires the 9600-111 expansion board)
- PA/150 (cylinder home print simulation, requires the 9600-111 expansion board)

One full system comprises any combination of the components described above. The IAS provides error/caution reporting for up to two full systems independent of each other.

1.2   POWER AND CABLING REQUIREMENTS

- The maximum distance from external devices to the IAS is 50 feet.

- The input power requirements are 115 VAC at 1 amp.

- A fused power entry module with an ON/OFF switch handles universal AC input power to the IAS.

- All incoming signals from external devices are isolated from internal logical controls via optical-couplers.

1.3   INTEGRATED ALARM SYSTEM OUTPUTS

The IAS has two different outputs:

1. Output 1 connects to a three-tiered light tower (red, yellow, green), or a red beacon. Multiple input signals can cause the red or yellow lights of the light tower, or the red beacon to light.

2. Output 2 connects to three sets of single pole double throw (SPDT) dry contacts which are capable of handling up to 115 VAC or 30 VDC. Relay K1 corresponds to the red beacon, relay K2 corresponds to the yellow beacon and relay K3 corresponds to the green beacon.

All relays are de-energized when the IAS is OFF. Turning ON the IAS energizes the green relay to indicate that the unit is ON and undergoing initialization. After completing the initialization process:

a. The green relay remains energized until you turn OFF the IAS, or until an error or caution condition is reported.

b. The red relay energizes when an error is reported.

c. The yellow relay energizes when a caution is reported.

The three dry contacts for the three error conditions are available for external connection. Both normally open (NO) and normally closed (NC) contacts are available. If needed, access the dry contacts at J11 on the Alarm Control Board (9600-081).

Output 1 has an external DB9 connector to connect physically and electrically with the 24 VDC three-tier light tower, or red beacon.

Output 2 has an internal 9 position terminal connection for dry contact (NO/NC) connection.

1.4   LIGHT TOWER INDICATIONS

Red Light - **Error Conditions**

If the IAS senses any error, it will latch into an error condition and display the following based on the application in use:

- LED1 – the printer applicator has generated an error.

- LED2 – N/A

- LED3 – a selected number of bad read errors.

- LED4 – a label applicator broken web error.

- LED5 – the photocell sensed a package (function undefined).

  (does not affect the red light on the light tower)

In addition to the LED display, the red light on the light tower, or red beacon will light. You must manually reset the alarm to clear the error.

Yellow Light - **Caution Conditions**

If the IAS senses any caution condition, the yellow light on the light tower will illuminate.

- LED1 – the printer applicator has generated a caution condition.

- LED2 – a Series 1 or a PEL/CIDS has generated a low ink caution.

- LED3 – N/A

- LED4 – a label applicator low label caution.

- LED5 – the photocell sensed a package (function undefined).

  (does not affect the yellow light on the light tower)
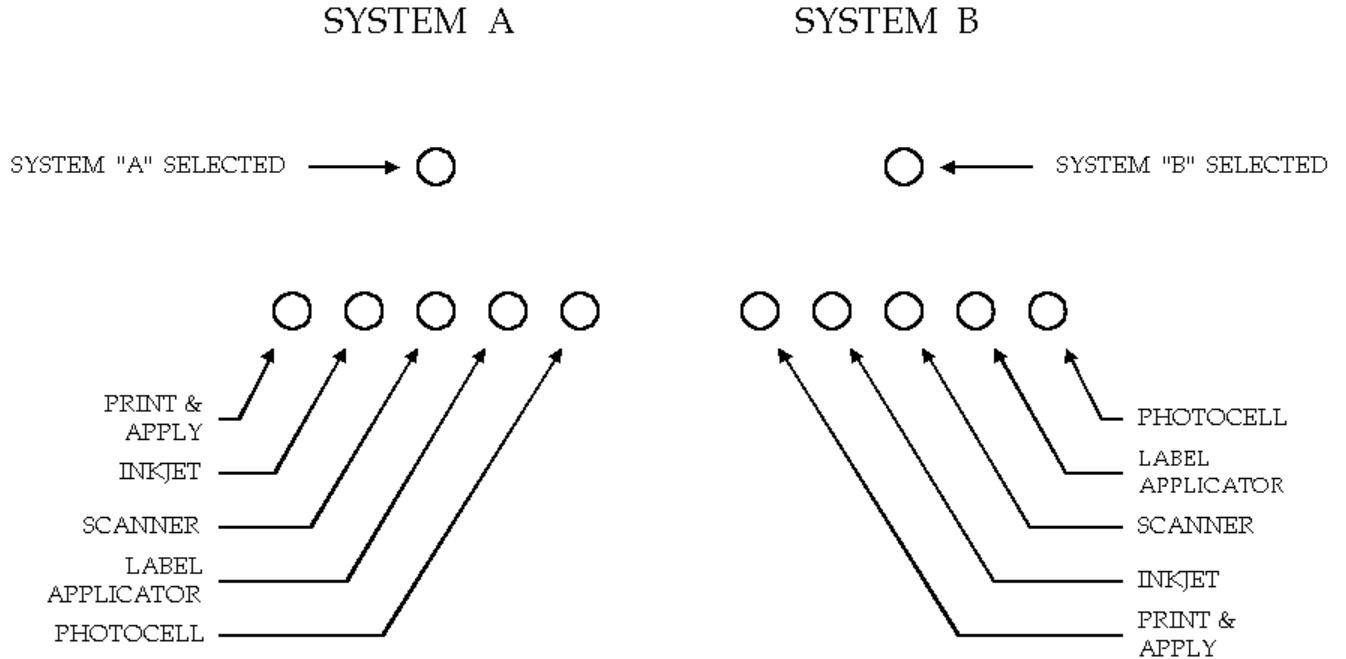

Normally, when used with a print and apply application, a yellow light indicates a pause condition. After correcting the caution condition, the yellow light will turn off automatically. In this case, a manual reset is not necessary.

SYSTEM A   SYSTEM B

SYSTEM "A" SELECTED ⟶ ○   ○ ⟵ SYSTEM "B" SELECTED

○ ○ ○ ○ ○   ○ ○ ○ ○ ○

PRINT &
APPLY

INKJET

SCANNER

LABEL
APPLICATOR

PHOTOCELL

PHOTOCELL

LABEL
APPLICATOR

SCANNER

INKJET

PRINT &
APPLY

1.5   SYSTEM PANEL LEDs

LEDs on the IAS panel indicate system errors and cautions. The LED display panel links detected faults to specific equipment devices or systems.

Any input error condition will light the appropriate LED on the front cover of the IAS to indicate which device is causing the error. A manual reset will clear the error condition and turn off the LED.

Any input caution condition will light the appropriate LED on the front cover of the IAS, indicating which device produced the caution. Correcting the caution condition will turn off the LED.

For detailed information, see Section 4 – Front Panel Display in this manual.

SECTION 2 – UNPACKING & INSTALLATION

2.1 UNPACKING

Remove the IAS, sensors and light tower from the shipping crate, as well as all the packing material.

2.2 INSTALLATION

- Mount the IAS at a height for front panel display readability and easy access to the reset button. Four mounting holes, one in each corner, provide easy mounting.

- The distance from the IAS to the system cannot exceed eight feet due to cable limitations.

- Mount the light tower, or red beacon within eight feet of the IAS.

SECTION 3 – INTERNAL CONNECTIONS

3.1 LOW LABEL SENSORS FOR LABEL APPLICATORS

1. Locate the low label sensor cable kit (9600-106).

2. Insert the end of the sensor through the cable grommet (located on the bottom of the IAS).

3. Pull the cable up and to the left side of the electronics to the connector labeled "LA" for operation as System A. The right side is for operation as System B.

4. Insert the red wire of the sensor in connector pin 1, and secure in place by tightening the screw.

5. Insert the black wire of the sensor in connector pin 3, and secure in place by tightening the screw.

6. Insert the white wire of the sensor in connector pin 4, and secure in place by tightening the screw.

7. Insert the connector on the Circuit Card Assembly (hereafter CCA) labeled "LA."

8. With the cable neatly routed along the side of the CCA, tighten the cable grommet to secure the cable in place.

9. Mount the low label sensor to the sensor mounting bracket illustrated in Section 5 - Mounting Sensors.

3.2 PRINTER APPLICATOR CABLE

1. Locate the printer applicator cable assembly kit (9600-105).

2. Insert the end of the cable assembly through the cable grommet (located on the bottom of the IAS).

3. Pull the cable up and to the left side of the CCA to the connector labeled "PA."

4. Insert the black wire of the printer applicator cable assembly in connector pin 1, and secure in place by tightening the screw.

5. Insert the red wire of the printer applicator cable assembly in connector pin 2, and secure in place by tightening the screw.

6. Insert the yellow wire of the printer applicator cable assembly in connector pin 3, and secure in place by tightening the screw.

7. Insert the green wire of the printer applicator cable assembly in connector pin 4, and secure in place by tightening the screw.

8. Insert the connector on the CCA labeled "PA."

9. With the cable neatly route along the side of the CCA, tighten the cable grommets to secure the cable in place.

10. Connect the printer applicator cable assembly to the printer applicator connector labeled "Warning Tower."

3.3   BAD READ/GOOD READ SCANNER CABLES

1. Locate two scanner cable assembly kits (9600-107).

2. Insert the end of the cable assembly through the cable grommet (located on the bottom of the IAS).

3. Pull the cable up and to the left side of the CCA to the connector labeled "Scanner."

4. Insert the red wire of one scanner cable assembly in connector pin 1, and secure in place by tightening the screw.

5. Insert the black wire of one scanner cable assembly in connector pin 2, and secure in place by tightening the screw.

6. Insert the red wire of the second scanner cable assembly in connector pin 5, and secure in place by tightening the screw.

7. Insert the black wire of the second scanner cable assembly in connector pin 6, and secure in place by tightening the screw.

8. Insert the connector on the CCA labeled "Scanner."

9. With the cable neatly routed along the side of the CCA, tighten the cable grommets to secure the cable in place.

10. Connect the scanner cable assembly to the Scanners DC output as illustrated in the Scanner Operation Manual.

SECTION 4 – FRONT PANEL DISPLAY

LEDs on the IAS panel display system errors and cautions with a set of LEDs for each system in operation. The LEDs on the left side of the panel provide System A error/caution reporting and the right side LEDs provide System B error/caution reporting.

If the green system LED is OFF, that system will not provide error/ caution reporting to either the beacons or the panel LEDs. If the green system LED is ON, the beacons will reflect both error and caution status. In addition, the appropriate red LED on the panel will identify the external device generating the alarm. The red LEDs correspond to the following components:

> LED 1 indicates that the Print and Apply has generated an error or caution.
> LED 2 indicates that a Series 1 or a PEL/CIDS has generated a low ink caution.
> LED 3 indicates a selected number of consecutive bad read errors.
> LED 4 indicates a Label Applicator low label caution or a broken web error.
> LED 5 indicates that the photocell sensed a package (function undefined).

A three-tier light tower, or red beacon attaches to the IAS to alert an operator of the error/caution type. Refer to Section 1 for an explanation of error/caution types and which equipment will produce these errors/cautions.

Pressing the reset button on the front panel causes the IAS to reinitialize. Pushing the reset button causes all front panel display LEDs and beacon lights to go out. Releasing the reset button causes the IAS to go through a short initialization.

- All LEDs will light.
- The red light will briefly light then go out.
- The yellow light will briefly light then go out.
- The green light will briefly light then go out.
- All light tower lights will be out briefly.
- After completing the initialization, the green light on the light tower and the green LED, if selected, on the front control panel will light.

After resetting the IAS, if an error condition still exists, the IAS will latch the existing error condition and light the appropriate LED on the display panel.

Only errors (red) require resetting the IAS. If the light is yellow, correcting the caution condition causes the light tower to go out automatically.
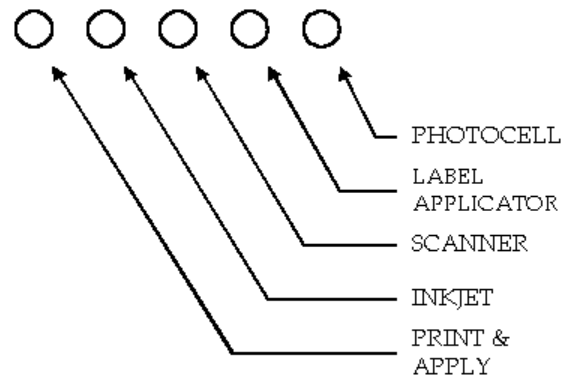
If you use a red beacon in place of a three tier light tower, the beacon will be OFF during a READY condition. The beacon lights whenever an error, or caution condition is reported. Refer to the panel LEDs to determine the severity of the reported alarm.

SYSTEM A   SYSTEM B

SYSTEM "A" SELECTED ⟶ ○   ○ ⟵ SYSTEM "B" SELECTED

○   ○   ○   ○   ○   ○   ○   ○   ○   ○

PRINT &   PHOTOCELL
  APPLY
                                           LABEL
INKJET   APPLICATOR

SCANNER   SCANNER

LABEL   INKJET
APPLICATOR
PHOTOCELL   PRINT &
                                           APPLY
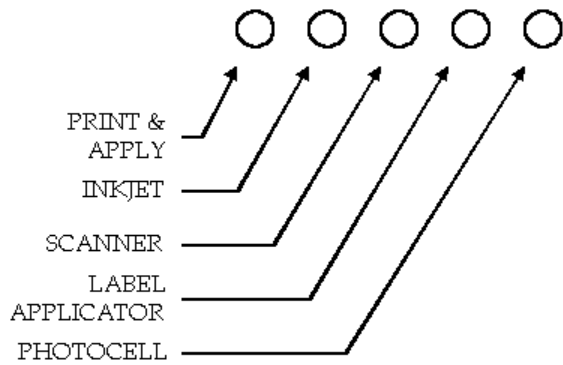
SECTION 5 – MOUNTING SENSORS

5.1 LOW LABEL SENSOR

The low label sensor consists of a fiber optic cable and a fiber optic controller.

The fiber optic cable attaches to the fan-fold label shelf/low label sensor mounting bracket. Two washers and nuts secure the fiber optic cable in place.

The fiber optic controller mounts to the bottom of the shelf assembly with two mounting screws and the fiber optic cable runs from the low label sensor mounting bracket to the fiber optic controller.

1. With the special fiber optic cable cutter, cut the fiber optic cable to a length that allows the fiber optic cable to reach the minimum and maximum box dimension range.

2. Run the controller cable end to the IAS (as specified in Section 3 - Internal Connection) and connect it to the six position connector located on the main CCA marked "LA."

SECTION 6 – SWITCH SETTINGS

The IAS controller board contains two sets of quad DIP switches to specifically define system applications. To avoid accidental damage, turn the IAS OFF before selecting the DIP switches. Following is a list of the DIP switch selections and their appropriate functions:

Switch Bank	DIP Switch	Function
1A	DS1 switch 1 = 0	System A not selected (idle), the left panel green LED is OFF.
	DS1 switch 1 = 1	System A selected (operational), the left panel green LED is ON.
2A	DS1 switch 2 = 0	System A, one bad read not selected.
	DS1 switch 2 = 1	System A, one bad read selected.
3A	DS1 switch 3 = 0	System A, two bad reads not selected.
	DS1 switch 3 = 1	System A, two bad reads selected.
4A	DS1 switch 4 = 0	System A, three bad reads not selected.
	DS1 switch 4 = 1	System A, three bad reads selected.

Turning Switch 1 OFF results in the left panel LED being OFF therefore, System A will not report errors/cautions. Turning Switches 2, 3 and 4 OFF result in the non-selection of the BAD READ/GOOD READ function.
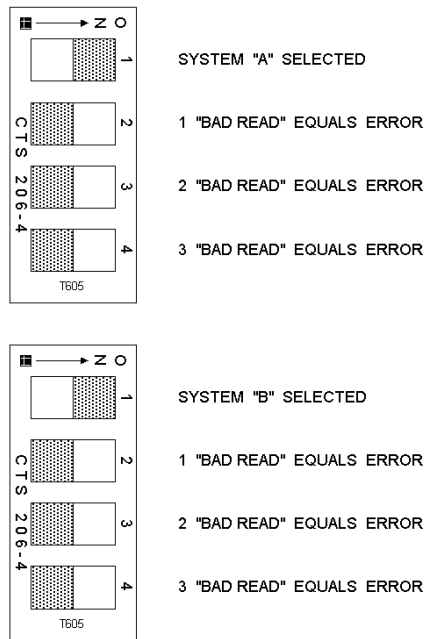
Selecting three bad reads overrides a selection of two bad reads. Likewise, selecting two bad reads overrides a selection of one bad read. The program only reads the DIP switches when the unit is first powered up or if a manual reset is initiated by the operator.

Switch Bank	DIP Switch	Function
1B	DS2 switch 1 = 0	System B not selected (idle), the right panel green LED is OFF.
	DS2 switch 1 = 1	System B selected (operational), the right panel green LED is ON.
2B	DS2 switch 2 = 0	System B, one bad read not selected.
	DS2 switch 2 = 1	System B, one bad read selected.
3B	DS2 switch 3 = 0	System B, two bad reads not selected.
	DS2 switch 3 = 1	System B, two bad reads selected.
4B	DS2 switch 4 = 0	System B, three bad reads not selected.
	DS2 switch 4 = 1	System B, three bad reads selected.

Turning Switch 1 OFF results in the right panel LED being OFF therefore, System B will not report errors/cautions. Turning Switches 2, 3 and 4 OFF result in the non-selection of the BAD READ/GOOD READ function.

Selecting three bad reads overrides a selection of two bad reads. Likewise, selecting two bad reads overrides a selection of one bad read. The program only reads the DIP switches when the unit is first powered up or if a manual reset is initiated by the operator.

INTEGRATED ALARM SYSTEM DIP SWITCH SETTINGS

SYSTEM "A" SELECTED

1 "BAD READ" EQUALS ERROR

2 "BAD READ" EQUALS ERROR

3 "BAD READ" EQUALS ERROR

SYSTEM "B" SELECTED

1 "BAD READ" EQUALS ERROR

2 "BAD READ" EQUALS ERROR

3 "BAD READ" EQUALS ERROR

SECTION 7 – BAD READ/GOOD READ FUNCTION

If you select One Bad Read, LED 3, and the red beacon, will light whenever a single bad read is reported. Clearing a bad read error requires a manual reset.

When you select two or three bad reads, LED 3 will light when a bad read occurs. The light tower, or red beacon will not report an error until the selected number of bad reads occurs.

Without a good read scanner installed, LED 3 and the red beacon, will light when a total of three bad reads are reported.

Installing a good read scanner will require the selected number of bad reads to be consecutive.

Clearing a bad read error requires a manual reset. A good read clears the bad read counter ensuring that two bad reads are consecutive.

SECTION 8 – FUSES

There are two fuses located on the main CCA:

- F1 = 1.0 Amp
- F2 = 0.5 Amp

There are two fuses located inside the universal power entry module:

- FU1 = 1 Amp
- FU2 = 1 Amp

SECTION 9 – AUXILIARY PHOTOCELLS

The IAS provides two photocell inputs per system. These are undefined at this time. If a photocell detects a package, LED 5 will illuminate and remain illuminated until the package has passed.

SECTION 10 – SPARE PARTS

Each IAS contains a spare parts kit.

A spare parts kit (9600-095) is available for IAS systems with a three tier light tower (9600-095).
The kit contains:

- Two fuses for the power entry module
- One fuse for the 24 VDC line (F1) on the Alarm Control Board (9600-081)
- One fuse for the 5 VDC line (F2) on the Alarm Control Board (9600-081)

A spare parts kit (9600-097) is available for IAS systems with a red beacon. The kit contains:

- Two fuses for the power entry module
- One fuse for the 24 VDC line (F1) on the Alarm Control Board (9600-081)
- One fuse for the 5 VDC line (F2) on the Alarm Control Board (9600-081)
- One spare bulb for the red beacon