

INSTRUCTION MANUAL  
**AIC-110**  
**ALARM INDICATOR/CONTROLLER**

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FOOD INSTRUMENT CORPORATION  
115 ACADEMY AVENUE  
FEDERALSBURG, MARYLAND 21632

Email: [ficsales@foodinstrumentcorporation.com](mailto:ficsales@foodinstrumentcorporation.com)

Web: [www.foodinstrumentcorporation.com](http://www.foodinstrumentcorporation.com)

1 (410) 754 5714 1 (800) KICKOUT

Fax: 1(410) 754 8796

## **WARRANTY**

The manufacturer warrants each unit for a period of one year to be free of defects in material and workmanship under normal use and service. The obligation of the manufacturer under this warranty being limited to replacing at the factory of manufacture any part of said unit found to be defective.

This warranty is expressly in lieu of all other warranties and representations, expressed or implied, and all other obligations,

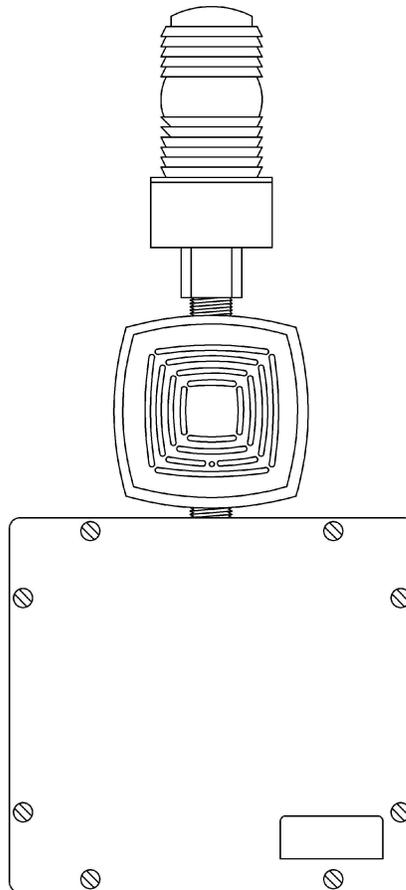
FOOD INSTRUMENT CORPORATION

AIC-110 ALARM INDICATOR/CONTROLLER  
Self Contained Mount

INSTRUCTION MANUAL

1.0 GENERAL

1.1 The AIC-110 Alarm Indicator/Controller is an accessory device which will accept logic level signals from a remote source such as the Food Instrument Corporation ADR-50D Universal Closure Monitor instrument, to activate strobe lights, and/or horns, or to provide switching for external devices such as motor controllers, can stops, etc. It has four isolated inputs and four form C relay contact outputs. Each relay can be individually programmed for momentary or latched operation requiring release at a local or remote Reset switch.



AIC-110 WITH STROBE LIGHT AND HORN

1.2 The AIC-110 is supplied in four configurations:

AIC-110 - Controller only.

AIC-110H - Controller with Horn.

AIC-110L - Controller with Strobe Light.

AIC-110HL - Controller with Horn and Strobe Light.

1.3 The AIC-110 is installed in a stainless steel hermetically sealed housing, suitable for mounting in a cook room or filling room subject to washdown. The strobe lights and horns are of waterproof construction so that the equipment can be installed in the filler or cook rooms.

1.4 The Control Inputs to the AIC-110 are digital logic level signals. The inputs accept logic level signals – 5 to 24 volts DC at 5mA.

1.5 The four outputs are form C contacts, capable of switching 7 amps at 230 VAC or 32 VDC. (Subject to derating)

## 2.0 INSTALLATION

- 2.1 The first step of the installation of the AIC-110 is to select the location for the AIC housing. The AIC housing must be mounted where the strobe lights will be visible to those concerned. Generally, it should be mounted high enough that it can be seen above machinery and equipment.
- 2.2 The AIC-110 is supplied with the strobe lights mounted to the top of the housing with a ½ inch i.p.s. close nipple. The nipple can be removed and a ½ inch conduit of any length can be substituted. The cabinet must be mounted at a level which gives easy access to the AIC reset switch mounted on the top of the housing.
- 2.3 All electrical connections (except for the strobe lights) are made through the bottom hub and the eight pin connector at the bottom of the AIC enclosure.

### PLC CONNECTION DIAGRAM

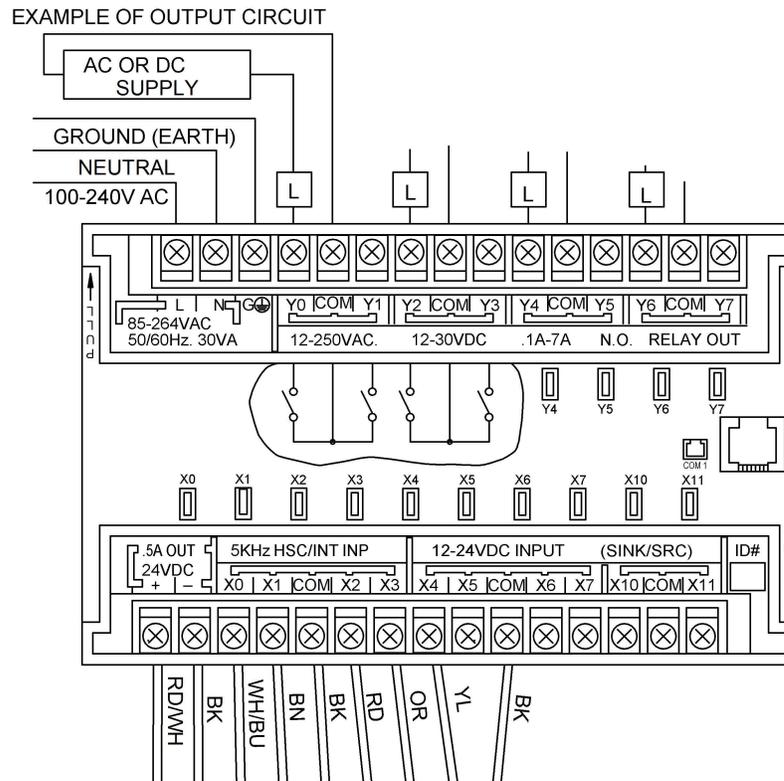


Figure 2.1

2.3.1 Power Input: 100 VAC to 240 VAC, 50/60Hz must be wired as shown in Figure 2.1.

2.3.2 Signals In: Each AIC channel requires a logic level pulse signal in. A 50 millisecond input pulse, 5 to 24 volt, to input channels 0 through 3 will pulse output channels 0 through 3. Also, the pulse width on each channel can be toggled between a 50 millisecond pulse, a 3 second pulse, and a 30 second pulse. pulse selection is enabled by pressing the reset switch five times, followed by pressing the reset switch again once for channel zero, twice for channel one, three times for channel two and four times for channel three. There is a three second window to make your selection after that you will have to enable pulse selection again. As each channel is selected again, it toggles between a 50 millisecond pulse width, selecting that channel again will change it to a 3 second pulse width.

A 100 millisecond input pulse will latch the relay contacts.

2.3.3 Signal(s) Out: The output signals consist of four sets of relay contacts at the output of the PLC (Y0-COM-Y1, Y2-COM-Y3, Y4-COM-Y5 and Y6-COM-Y7) respectively (Figure 2.1). Each channel offers a normally closed and a normally open relay contact. For example, when Y0, Y2, Y4 and Y6 are turned on then Y1, Y3, Y5 and Y7 are turned off respectively.

2.3.3.1 Strobe/Horn: The strobes, if supplied with the AIC-110, are wired to the power line through the relay contacts. Fuses or circuit breakers should be installed in individual lines.

2.3.4 Reset: Latched relays can be released with the RESET switch located on the enclosure, or with a remote reset switch. The remote Reset Switch is connected to the system through connector P-3 on the Signal Interface Board (Figure 2.2). You can Reset all channels simultaneously by pressing the Reset Switch (local or remote) until the relays drop out (Approximately 3 seconds), or you can reset individual channels by pressing the reset switch once for channel 0, twice for channel 1, three times for channel 2 or four times for channel 3.

## SIGNAL INTERFACE BOARD

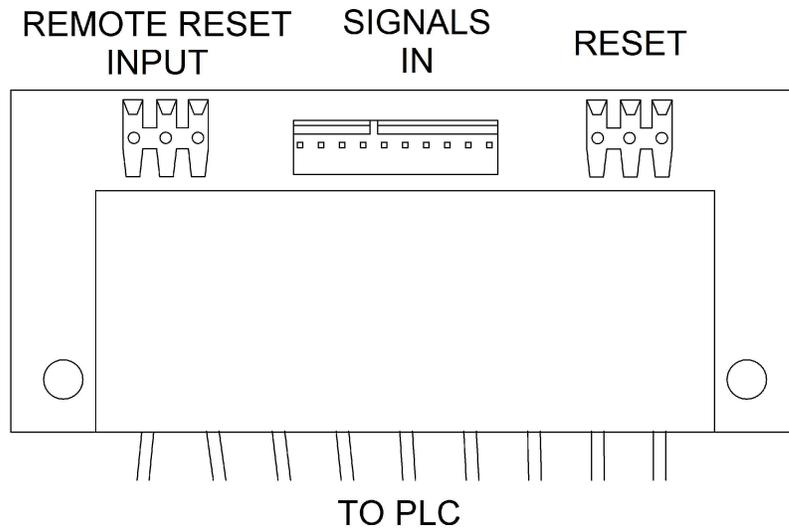


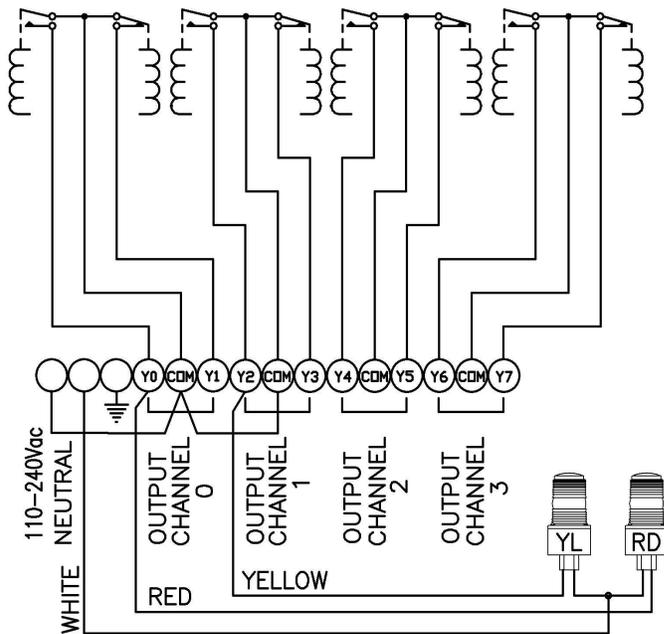
Figure 2.2

- 2.3.4.1 Remote Reset: A remote reset switch can be located near the operator and connected to the AIC-110 through the Remote Reset connector (P-3) on the Signal Interface Board. The Remote RESET Switch must be a normally closed, momentary open switch.

# INPUT/OUTPUT WIRING AIC-110

See ADR-50D Manual, Section 3.5  
for AIC Input Programming

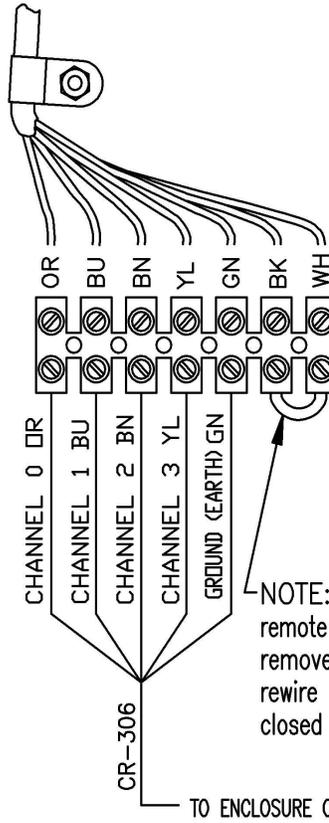
## AIC-110 OUTPUT



| CHANNEL    | 0    |     | 1    |      | 2   |      | 3    |     |
|------------|------|-----|------|------|-----|------|------|-----|
| PLC PIN    | Y0   | COM | Y1   | Y2   | COM | Y3   | Y4   | COM |
| CONTACTS*  | NO   | —   | NC   | NO   | —   | NC   | NO   | —   |
| PULSE TIME | .05s | —   | .05s | .05s | —   | .05s | .05s | —   |
|            | 3s   | —   | 3s   | 3s   | —   | 3s   | 3s   | —   |
|            | 30s  | —   | 30s  | 30s  | —   | 30s  | 30s  | —   |

\* NO Normally Open \* NC Normally Closed \* When AIC power is off all relay contacts are OPEN

## AIC-110 INPUT



NOTE: To install remote reset switch, remove jumper and rewire with normally closed reset switch.

TO ENCLOSURE CONNECTOR

## 3.0 OPERATION

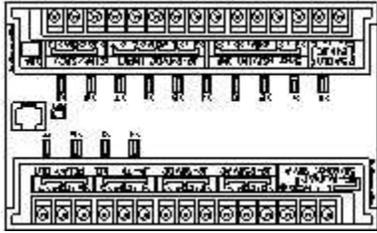
- 3.1 The AIC-110 Alarm Indicator/Controller is a flexible device for controlling Alarms such as strobe lights and horns, as well as controlling motors, can stops, conveyors, rejectors etc. It can be used to switch multiple loads on an instantaneous basis or on a sustained basis with the latched relay output. Coupled with the Counters/Controllers function of the ADR-50D, it gives you unequalled Control and Monitoring capabilities in your operation.

### **PROGRAMMING INSTRUCTIONS – ADR-50D**

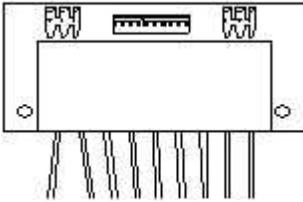
To program the ADR-50D Universal Closure Monitor to work with the AIC-110 Controller, refer to the ADR-50D instruction manual, section 3.5, Programmable Alarms/Counters.

- 3.2 Refer to Figure 2.1 for connections to external loads.
- 3.3 Reset: When a latching relay is activated, it can be opened by pressing the RESET Switch on the equipment housing or with the Remote RESET Switch, if installed. You can Reset all channels simultaneously by holding the RESET Switch (local or remote) until the relays drop out (Approximately 3 seconds), or you can reset individual channels by pressing the reset switch once for channel 0, twice for channel 1 three times for channel 2 or four times for channel 3.

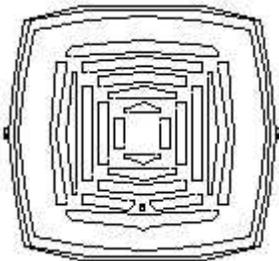
## Replacement Parts



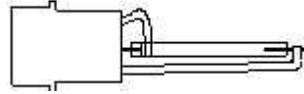
Programmable Logic Controller  
D.C. Input, Relay Output  
Part No. .... F30-117-0012



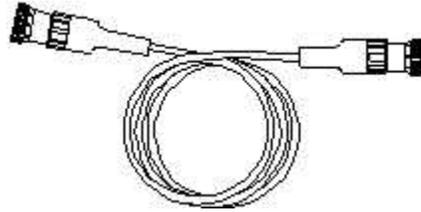
PLC Circuit Board Assembly  
Part No. .... 109A048-B



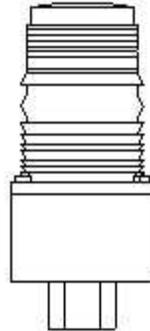
Alarm Horn  
Part No. .... F30-119-0017



Flash Tube  
Part No. .... F30-1008-0007



AIC-110 Cable (CR-311)  
Part No. .... 109A077-A



Strobe Light (110 Volt)  
Part No. .... F30-108-0003

Strobe Light (220 Volt)  
Part No. .... F30-108-0009