Bailey® infi 90®

Instruction

Operator Interface Console (40 Series)
Hardware Manual
(IIOIC42)
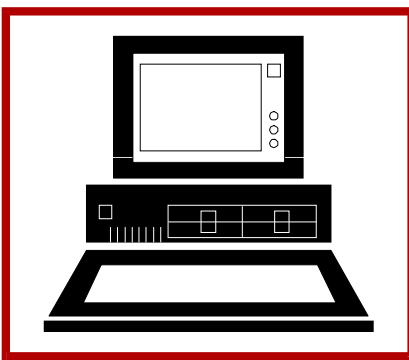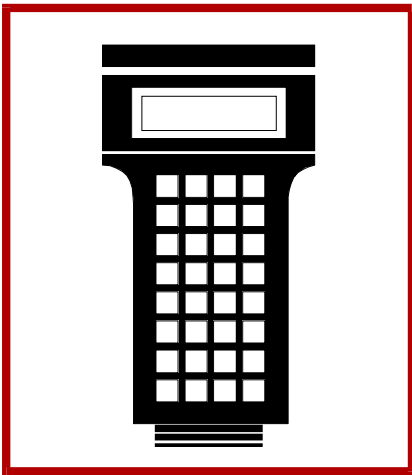
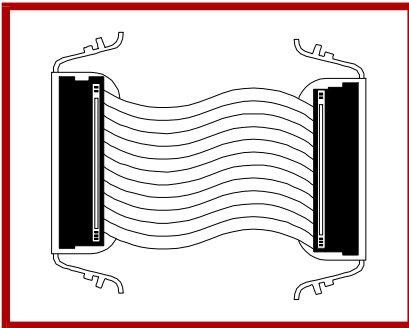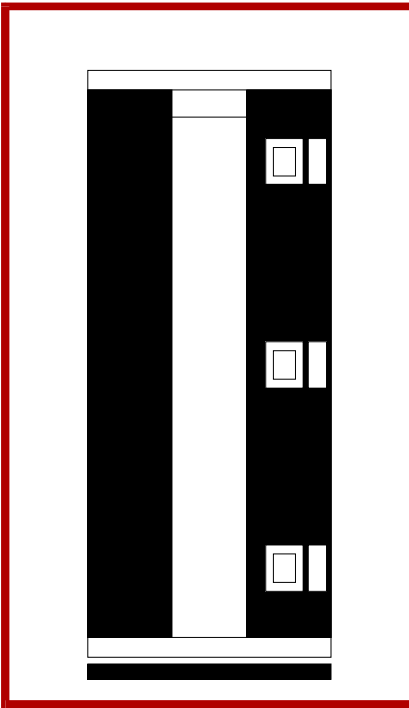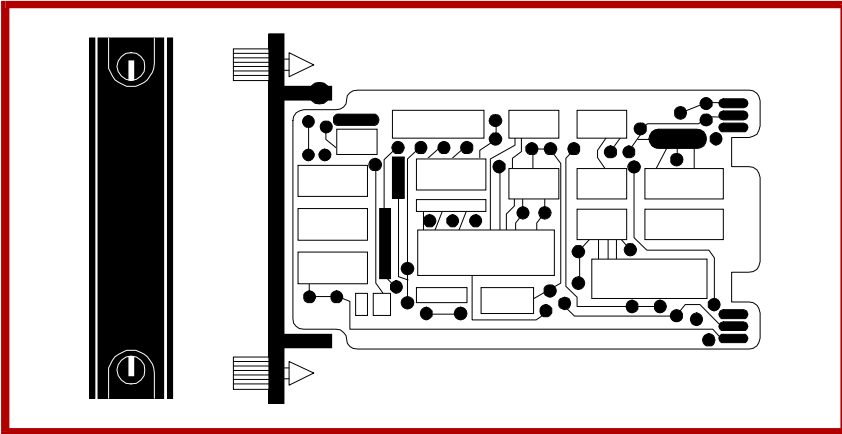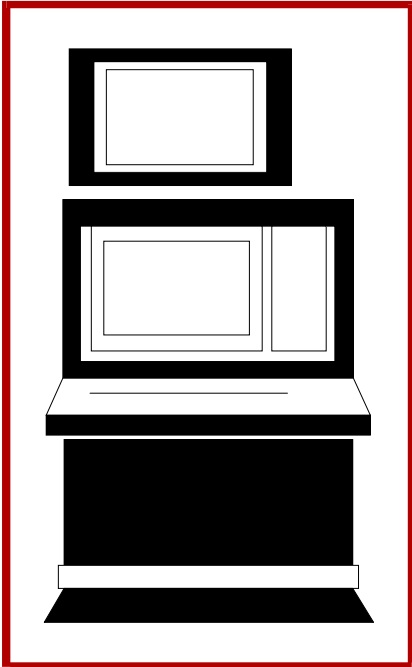**WARNING** notices as used in this instruction apply to hazards or unsafe practices that could result in personal injury or death.

CAUTION notices apply to hazards or unsafe practices that could result in property damage.

NOTES highlight procedures and contain information that assists the operator in understanding the information contained in this instruction.

Preface

This instruction provides specific hardware installation, troubleshooting, maintenance, repair and replacement procedures information necessary for the IIOIC42 Operator Interface Console. This operator interface console is compatible with the IIOIS42 Operator Interface Station and with the IIOIS41 Operator Interface Station. These stations must use G.3 software or later.

This instruction should be used in conjunction with the hardware manual for the appropriate IIOIS Operator Interface Station. There are three additional instructions that explain how to set up and use the OIC console and OIS station. The instructions include:

File Utilities   Provides software load, upgrade and maintenance procedures, as well as save and restore configuration procedures.

Operation   Gives a brief overview of the console and INFI 90 $^®$ OPEN system to familiarize the reader. It then explains the operations that can be performed after configuring the OIS console.

Configuration   Gives the procedures to configure the OIS console as a system for proper operation with its OIC console and peripherals and the INFI 90 OPEN system. It also explains each function of the OIS console, and gives configuration procedures and requirements.

$^®$Registered trademark of Elsag Bailey Process Automation.

List of Effective Pages

Total number of pages in this instruction is 100, consisting of the following:

Page No.	Change Date
Preface	Original
List of Effective Pages	Original
iii through x	Original
1-1 through 1-9	Original
2-1 through 2-2	Original
3-1 through 3-31	Original
4-1 through 4-3	Original
5-1 through 5-6	Original
6-1 through 6-30	Original
7-1 through 7-2	Original
A-1 through A-4	Original
Index-1 through Index-3	Original

When an update is received, insert the latest changed pages and dispose of the superseded pages.

NOTE: On an update page, the changed text or table is indicated by a vertical bar in the outer margin of the page adjacent to the changed area. A changed figure is indicated by a vertical bar in the outer margin next to the figure caption. The date the update was prepared will appear beside the page number.

Safety Summary

GENERAL WARNINGS	**Equipment Environment** All components, whether in transportation, operation or storage, must be in a noncorrosive environment. **Electrical Shock Hazard During Maintenance** Disconnect power or take precautions to insure that contact with energized parts is avoided when servicing.

SPECIFIC WARNINGS	Verify all covers are installed and all doors are closed before operating the console. Exposed electrical connections present a shock hazard that can cause injury or death. (p. 3-2, 3-6) Never clean electrical parts or components with the power on. Doing so exposes you to a fatal electrical shock hazard. (p. 5-3) Wear eye protection whenever working with cleaning solvents. When removing solvents from printed circuit boards using compressed air, injury to the eyes could result from splashing solvent as it is blown off the printed circuit board. (p. 5-3) The monitor will slide out the rear of the cabinet by itself when the mounting bolts are removed. The monitor weighs approximately 27 kilograms (60 pounds) and can cause bodily injury if it is allowed to slide out by itself. Support the monitor before removing the rear two bolts. (p. 6-22, 6-23)

SPECIFIC CAUTIONS	Make sure that all voltage labels and voltage switch settings on the peripheral devices, power supply and power entry panel show the correct operating voltage. Equipment damage may result if the incorrect voltage is connected. Make sure the console main power circuit breaker is off before changing operating voltage setting or equipment damage may result. (p. 3-4, 3-31) Remove power from all peripheral equipment and the console before installing or removing peripheral equipment. Equipment damage may result. (p. 3-5, 3-31) Failure to turn off the main power circuit breaker before removing or inserting modules into the card cage may result in equipment failure. (p. 6-3) On the keyboard interface connector board, set positions 5, 6 and 7 of dipswitch SW1 to closed (on). Set positions 1 through 4 and 8 of dipswitch SW1 to open (off). Failure to configure dipswitch SW1 properly will damage the CPU in the console. (p. 6-17)

AVERTISSEMENTS D'ORDRE GÉNÉRAL	**Environnement de l'équipement** Ne pas soumettre les composants à une atmosphère corrosive lors du transport, de l'entreposage ou l'utilisation. **Possibilité de chocs électriques durant l'entretien** Débrancher l'alimentation ou prendre les précautions pour éviter tout contact avec des composants sous tension durant l'entretien.

AVERTISSEMENTS D'ORDRE SPÉCIFIQUE	Assurez-vous que tous les couvercles sont installés et toutes les portes fermées avant de faire fonctionner la console. L´exposition à des connexions électriques presénte un risque de blessure ou d´électrocution fatale. (p. 3-2, 3-6) Il ne faut jamais nettoyer des piècesou des composants électriques lorsqu'ils sont sous tension. Ceci présente un risque d'électrocution fatale. (p. 5-3) Portez toujours des lunettes de protection lorsque vous utilisez des solvants de nettoyage. L'aircomprimé servant à enlever le solvant des cartes de circuits imprimés provoque des éclaboussures qui risquent d'atteindre les yeux. (p. 5-3) Supportez le moniteur avant de retirer les deux boulons d'ancrange à l'arriér. Lorsque ces boulons d'ancrage sont retirés, l'e moniteur glissera et sorta à l'arriér de l'armoire. l'e moniteur pése environ 27 kilograms (60 pounds) et pourrait entrainer des blessures si on le laisse glisser de l'armoire. (p. 6-22, 6-23)

ATTENTIONS D'ORDRE SPÉCIFIQUE	Assurez-vous que toutes les indications de tension et tous les réglages de tension sur les périphériques, le bloc d´alimentation et le panneau d´entrée des alimentations correspondent bien à la tension de service. Une tension incorrecte risque d´endommager l´equipment. Assures-vous que le disjoncteur d´alimentation principal de la console est étient avant de modifier les réglages de tension de service afin d´éviter d´endommager l´équipment. (p. 3-4, 3-31) Coupez l´alimentation des périphériques et de la console avant d´installer ou de retirer des périphériques, sinon l´équipment risque de subir des dommages. (p. 3-5, 3-31) Si l'on omet d'eteindre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default. (p. 6-3)

Sommaire de Sécurité (suite)

ATTENTIONS D'ORDRE SPÉCIFIQUE (suite)	Sur le circuit de raccordement de l'interface du clavier, règler les interrupteurs 5, 6 et 7 de SW1 à la position fermèe (ON). Règler les interrupteurs 1 à 4 et 8 de SW1 à la position ouverte (OFF). Si les interrupteurs de SW1 ne sont pas configurés adéquatement, le CPU de la console sera endommagé. (p. 6-17)

Table of Contents

Table of Contents (continued)

Table of Contents (continued)

List of Tables

List of Figures

SECTION 1 - INTRODUCTION

OVERVIEW

The IIOIC42 Operator Interface Console (auxiliary console) is a remote monitor and keyboard interface that connects to a main console, either a IIOIS41 or IIOIS42 Operator Interface Station (G.3 or later software). The main console connects to the Plant Loop® or INFI-NET® communication highway.

In this document, auxiliary terminal refers to an IIOIC42 console (Figures 1-1 through 1-4). Read all of this instruction to get the greatest benefit of the information it contains. Read each procedure before doing the task. Call the local Elsag Bailey sales office for technical assistance.

This section contains an overview of the auxiliary console. This document contains directions and cautions for installing and servicing the operator interface console (OIC).

INTENDED USER

System engineers and technicians with a background in process control systems should read this instruction thoroughly before installing and using the system. ***Do not*** put the console into operation until you read and thoroughly understand this instruction. This instruction is a reference for installers with installation and maintenance experience on process control equipment. It is not a tutorial.

OIC DESCRIPTION

The operator interface console is an auxiliary console for the main console (OIS). It provides a remote operator interface for displaying graphics, alarm summaries, INFI 90® OPEN status and for logging, trending and process control. The auxiliary console allows more than one operator to use a single main console. The four models of OIC42 operator consoles are 19-inch tabletop (IIOIC421), console (IIOIC422 which has two variations), environmental cabinet (IIOIC423), and 19-inch panel mount model (IIOIC424). The variations of the console model (IIOIC422) can have an upper monitor (IIOIC4222) or lower monitor (IIOIC4221).

An Ethernet network cable connects the OIC auxiliary console to a OIS main console. Refer to Section 3 and Section 6 for more hardware information. Four models of the OIC are shown in Figures 1-1, 1-2, 1-3 and 1-4. Table 1-1 lists the models.

® Registered trademark of Elsag Bailey Process Automation.

OVERVIEW
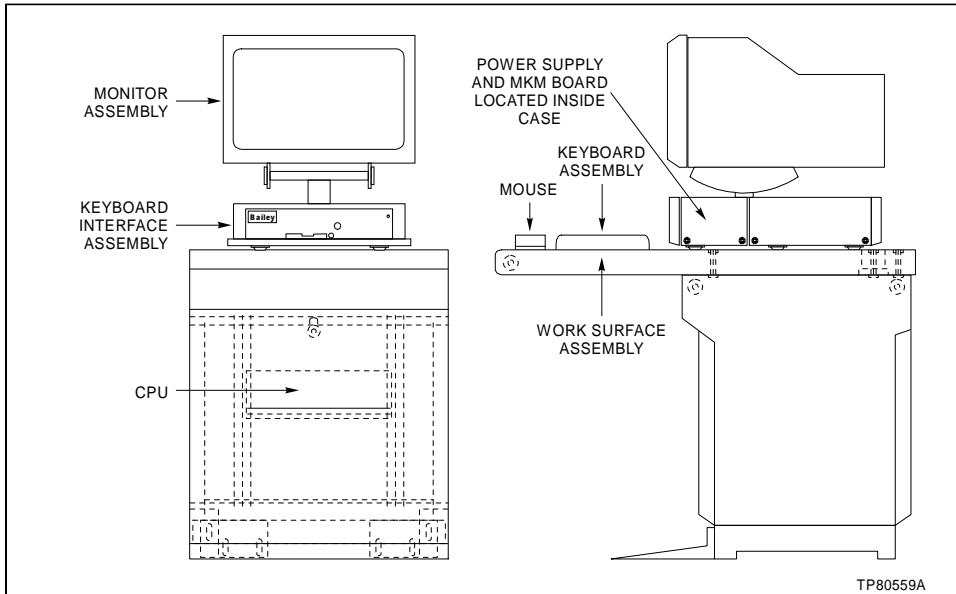
Figure 1-1. IIOIC421 Tabletop Model
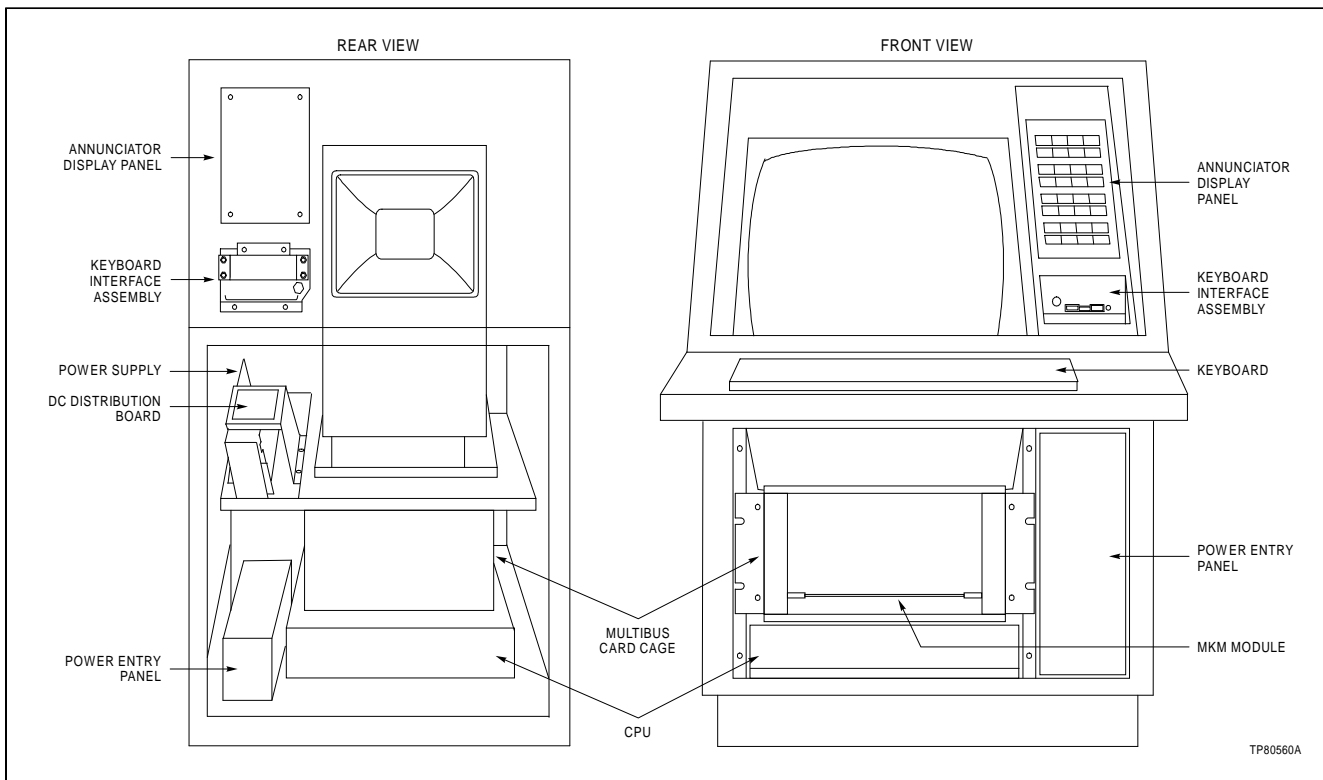
Figure 1-2. IIOIC4221 Console Model
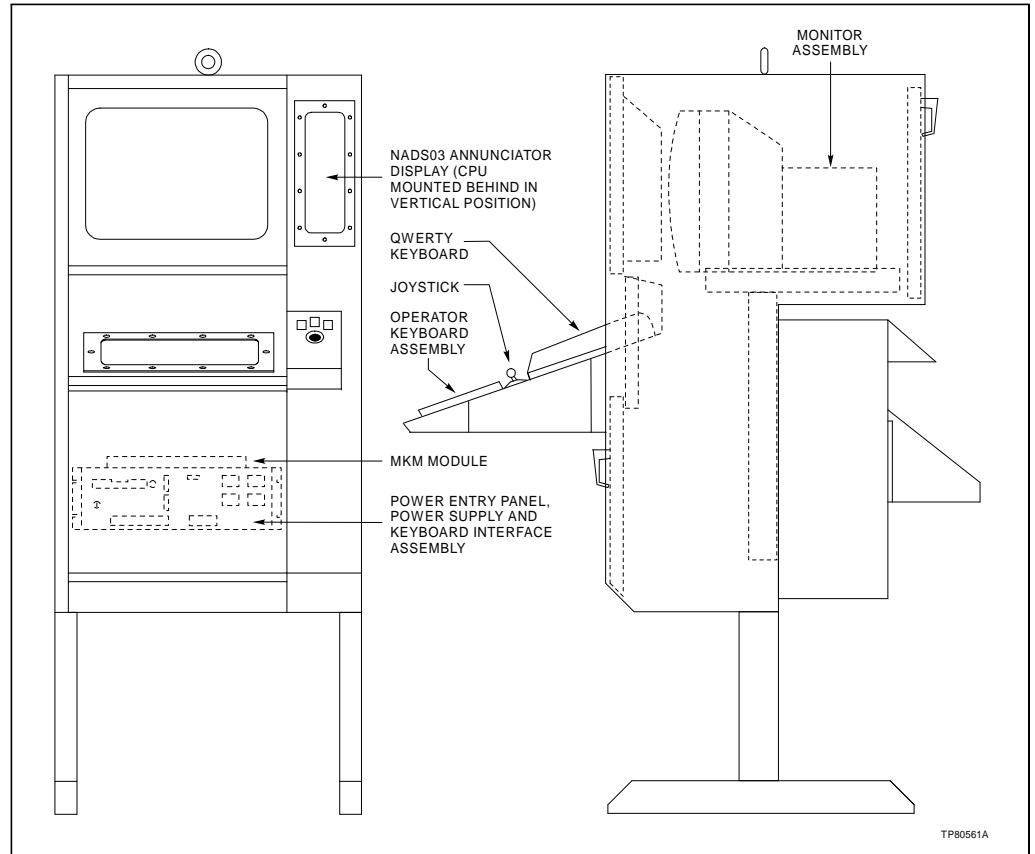
Figure 1-3. IIOIC423 Environmental Model
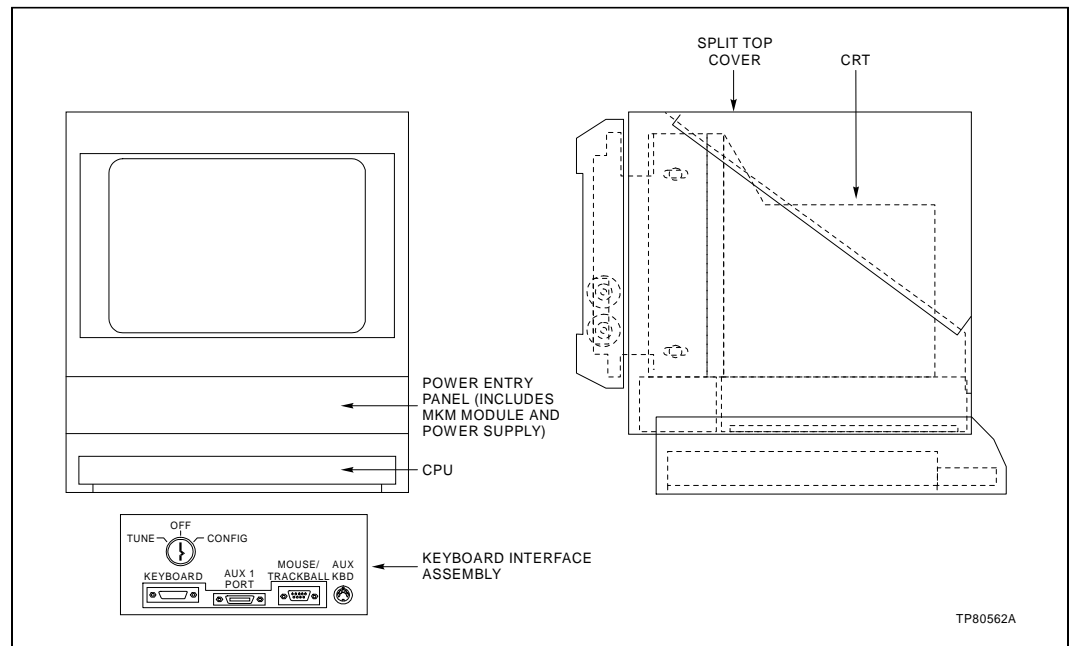
Figure 1-4. IIOIC424 Panel Mounted Model

Table 1-1. IIOIC42 Models

Nomenclature	Description
IIOIC421	Tabletop with 19-inch monitor
IIOIC4221	Console with lower monitor
IIOIC4222	Console with upper monitor
IIOIC423	Environmental cabinet
IIOIC424	Panel mounted

CPU (Central Processing Unit)

The CPU described in this manual is a Tektronix Model XP400. Specifications for this CPU are listed at the end of this section and in the manufacturer's manuals.

IIOIC421 Tabletop Console

The hardware of the tabletop console is located in a moveable case which sits on a work surface. The power supply and multibus keyboard module (IIMKM02A, also referred to as the MKM) are in the case. The monitor is mounted on top of the case and the keyboard interface assembly is located below the monitor. The monitor can tilt and swivel.

The rear connector panel has an AC input, alarm relays, connectors for monitor cables and a power switch. The front panel has the connectors for peripheral operator input devices and a tune-off-configuration keyswitch. The CPU is located inside the table on a shelf. Access the connections from the rear of the cabinet. The alarm relays are for alarm annunciation only.

IIOIC4221 and IIOIC4222 Console

The hardware of the OIC422 console is very similar to the OIS console. There are several differences. The CPU has only a multibus keyboard module, it does not have a CIU, and it does not have a floppy disk drive or hard disk drive.

The annunciator display panel and keyboard interface assembly are located to the right of the monitor. The power entry panel is mounted in a vertical position in the lower part of the cabinet. The multibus card cage and MKM module are to the left of the power entry panel. The console may have a lower monitor or an upper monitor.

IIOIC423 Environmental Cabinet

The environmental cabinet contains a monitor, power entry panel, operator keyboard, annunciator display panel and interface similar to the console model, 19-inch panel mount and 19-inch tabletop model.

OIC DESCRIPTION

The hardware of the environmental OIC console is separated into the upper and lower half of the cabinet. The CPU and monitor are located in the top of the cabinet. The power entry panel and MKM module are in the lower half of the cabinet with the power supply. The annunciator display panel and monitor are on the front of the cabinet. The alarm relays are for alarm annunciation only.

A sealed air conditioner provides internal cooling and the stainless steel exterior provides corrosion protection.

IIOIC424 Panel Mounted

The hardware of the panel mounted OIC console is located behind the monitor and keyboard interface assembly. The power supply, power entry panel, CPU and MKM module are located with the monitor. The keyboard interface assembly is mounted on a separate panel. The alarm relays are for alarm annunciation only.

INSTRUCTION CONTENT

Introduction — Presents an overview of the OIC consoles and related hardware. It also provides a complete list of specifications.

Description and Operation — Describes the theory of operation of the OIC consoles and related hardware.

Installation — Describes the installation and cabling. It also describes the jumper settings of the multibus modules and peripherals. Be sure to read and follow all warnings and cautions.

Troubleshooting — Lists troubleshooting steps and provides a troubleshooting guide.

Maintenance — Contains a schedule and procedures for maintenance.

Component Description and Replacement — Describes the hardware associated with the OIC42 and replacement procedures for that hardware.

Support Services — Includes a spare parts list and ordering instructions.

Quick Reference Information — Contains jumper and switch settings and fuse locations.

HOW TO USE THIS INSTRUCTION

Read this entire instruction through in sequence before attempting to install or use the console. It is important to become familiar with the entire content of the instruction prior to installing and operating the console to attain maximum system efficiency.

INSTRUCTION CONTENT

The instruction is organized into seven sections and a quick reference. Its organization enables finding specific information quickly, and using this instruction as a reference after becoming fully familiar with the console.

Be sure to read the notes which provide:

- Additional information.

- Information that should be considered before performing a certain operation or function.

GLOSSARY OF TERMS AND ABBREVIATIONS

Table 1-2 contains those terms and abbreviations that are unique to Bailey or have a definition that is different from standard industry usage.

Table 1-2. Glossary of Terms and Abbreviations

Term	Definition
ADP	Annunciator display panel.
CPU	Tektronix Model XP400 Logic Module
INFI-NET	Advanced data communication highway.
MKM	The designation MKM in this manual refers to the IIMKM02A multibus keyboard module.
OIS	Operator interface station. Integrated operator console with data acquisition and reporting capabilities providing a digital access into the process for flexible control and monitoring.
PCU	Process control unit. A node on the plant-wide communication network containing control and I/O modules.
PEP	Power entry panel.
Plant Loop	Network 90 data communication highway.

REFERENCE DOCUMENTS

Table 1-3 lists Elsag Bailey instructions referenced in this instruction.

Table 1-3. Reference Documents

Number	Document
I-E96-191-4	Hardware, Operator Interface Station, IIOIS41
I-E96-192-1	Operation, Operator Interface Station (40 Series)
I-E96-192-2	Configuration, Operator Interface Station (40 Series)
I-E96-192-3	File Utilities, Operator Interface Station (40 Series)
I-E96-192-4	Hardware, Operator Interface Station, IIOIS42
I-E96-500	Site Planning and Preparation

NOMENCLATURE

Table 1-4 contains the nomenclature used in this instruction.

Table 1-4. Hardware Nomenclature

Nomenclature	Description
IIAKB04	QWERTY style auxiliary (engineering) keyboard.
IIAMS04	Mouse cursor controller.
IIATB05	Trackball cursor controller.
IIMKM02A	Multibus keyboard module.
IIOIC421	Tabletop operator console with a 19-inch monitor, tilt/swivel base and keyboard.
IIOIC4221	Console style operator console with a lower mounted 19-inch monitor and keyboard.
IIOIC4222	Console style operator console with an upper mounted 19-inch monitor with tilt swivel base and keyboard.
IIOIC423	Environmental operator console with a 19-inch monitor and keyboard.
IIOIC424	Panel mount operator console with a 19-inch monitor and engineering keyboard.

OIC CONSOLE SPECIFICATIONS

Table 1-5 contains the specifications for the OIC Console.

Table 1-5. OIC Console Specifications

Property	Characteristic/Value
Power	
Line voltage	240 V nominal (180 VAC to 264 VAC RMS) 120 V nominal (90 VAC to 132 VAC RMS)
Line frequency	47 to 63 Hz
Circuit breaker size	20 A circuit breaker for IIOIC422 and IIOIC423 consoles 10 A circuit breaker for IIOIC421 and IIOIC424 consoles
Power characteristics	

Model	Inrush Current Amps Typical	Crest Factor	Power Factor Typical
IIOIC421	42	2.96	0.610
IIOIC4221	42	2.34	0.730
IIOIC4222	42	2.34	0.730
IIOIC423	42	1.95	0.843
IIOIC424	42	2.96	0.610

Table 1-5. OIC Console Specifications (continued)

Property	Characteristic/Value
Power consumption	
Power supply	+5 VDC at 20 A, +12 VDC at 4 A, -12 VDC at 4 A
Keyboard Interface	Operator keyboard output relays rated at 250 mA 24-28 VDC per IIMKM02A module.
Alarm relays	6 per keyboard
Alarm tones	5 per keyboard
Keyboards	1 Mylar (operator) 1 Engineering (QWERTY)
Annunciator display panels	4 (per IIMKM02A module) 32 pushbuttons and LEDs per panel
Environment	
Temperature	Operating: 10° to 40°C (50° to 104°F) Nonoperating[1]: -30° to 65°C (-22° to 149°F Storage: 5° to 50°C (41° to 122°F)
Relative humidity	Operating: 20% to 80% noncondensing Recommended minimum: 40% Storage: 10% to 90% noncondensing
Altitude	-0.3 to +2.4 km (-0.2 to 1.5 mi)
Cooling requirements (Heat dissipation)	

Power consumption table:

Model	Voltage	Typical Amps	Maximum Amps	Typical Watts	Maximum Watts
IIOIC421	120	1.96	2.55	175	227
	240	1.20	1.56	175	227
IIOIC4221	120	1.80	2.34	158	205
	240	1.11	1.44	162	211
IIOIC4222	120	1.80	2.34	158	205
	240	1.11	1.44	162	211
IIOIC423	120	3.95	5.14	401	521
	240	1.93	2.51	392	510
IIOIC424	120	1.96	2.55	175	227
	240	1.20	1.56	175	227

Keyboard Interface alarm relays table:

Alarm Relays	Rating
Contact Voltage	24 VDC
Contact Current	0.25 A
Contact Power	6 W

Cooling requirements table:

Model	BTU/Hr Nominal	BTU/Hr Maximum
IIOIC421	598	775
IIOIC4221	540	700
IIOIC4222	540	700
IIOIC423	1,339	1,742
IIOIC424	598	775

Table 1-5. OIC Console Specifications (continued)

Property	Characteristic/Value
Dimensions	
Weight	
Electrical noise	Keep cabinet doors closed. Do not use portable transmitting equipment within 2 m (6.5 ft) of a cabinet.
Certification (pending)	CSA certified for use in an ordinary (nonhazardous) controlled environment.

Dimensions table:

Model	Height		Width		Depth	
	cm.	in.	cm.	in.	cm.	in.
IIOIC421	55.80	22.00	49.53	19.50	60.96	24.00
IIOIC4221	107.27	42.23	71.12	28.00	109.01	42.92
IIOIC4222	156.94	61.78	71.12	28.00	109.01	42.92
IIOIC423	177.8	70.00	76.20	30.00	95.09	37.45
IIOIC424	614.1	24.17	116.00	45.67	94.97	37.39

Weight table:

Model	Weight	
	kg	lbs
IIOIC421	175	386
IIOIC4221	164	360
IIOIC4222	191	420
IIOIC423	240	530
IIOIC424	71	157

NOTE :
1. Nonoperating environment is defined as a transportation or storage period of less than 60 days.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

OIC CONSOLE SPECIFICATIONS

SECTION 2 - DESCRIPTION AND OPERATION

INTRODUCTION

This section explains the theory of operation for the operator interface console. An operator uses the OIC console to monitor and control the process through an OIS main console. For OIC operating procedures, refer to the operation instruction.

The OIC console interfaces to INFI-NET and Plant Loop communication highways through the OIS main console. It can monitor and allow manual control of a process through color graphics displays which show equipment status and process state. Figure 2-1 shows a block diagram of the communication process.
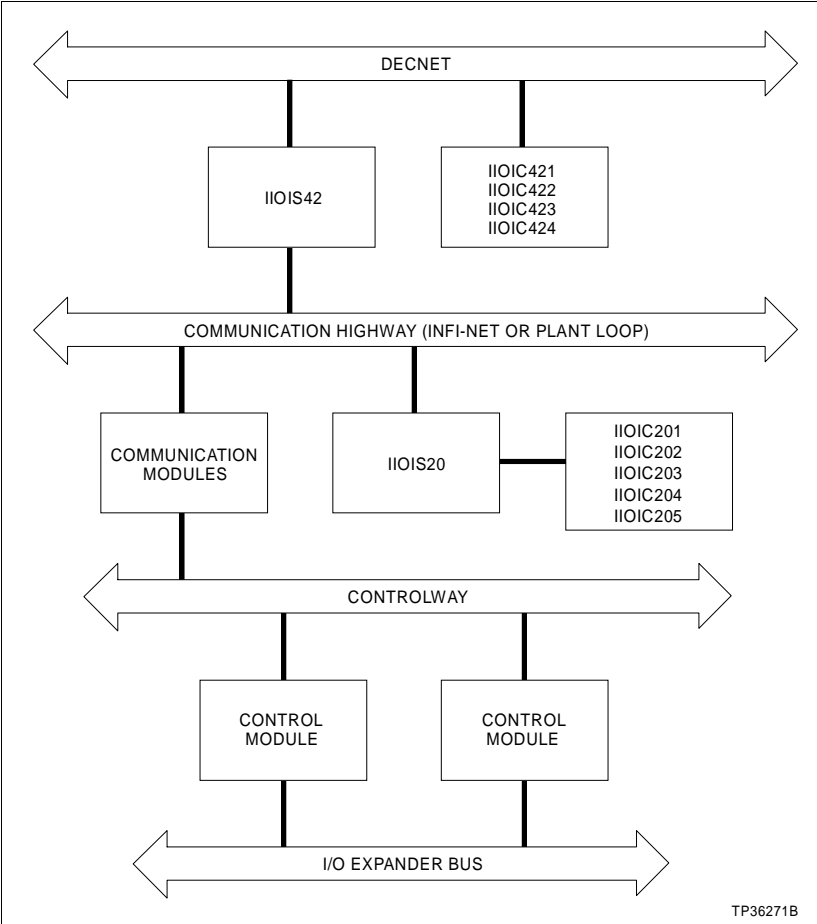
Figure 2-1. OIC Communication Levels

OIC CONSOLE FUNCTIONAL OPERATION

The OIC console controls and monitors a process through the OIS console. The OIC console is a remote operator station with a monitor and keyboard controlled by a CPU. Commands between the OIC and OIS main console pass through an Ethernet network cable using either DECnet or TCP/IP protocol.

The OIC console uses a Tektronix model XP400 terminal logic module. In the OIC console, the CPU sends video signals to the monitor. A cable connects the CPU to the RGB connectors on the monitor.

Figure 2-2 is a block diagram of the IIOIC42 operator interface console. Refer to Section 3 for OIC CPU connections. Refer to Section 6 for a description of the CPU.
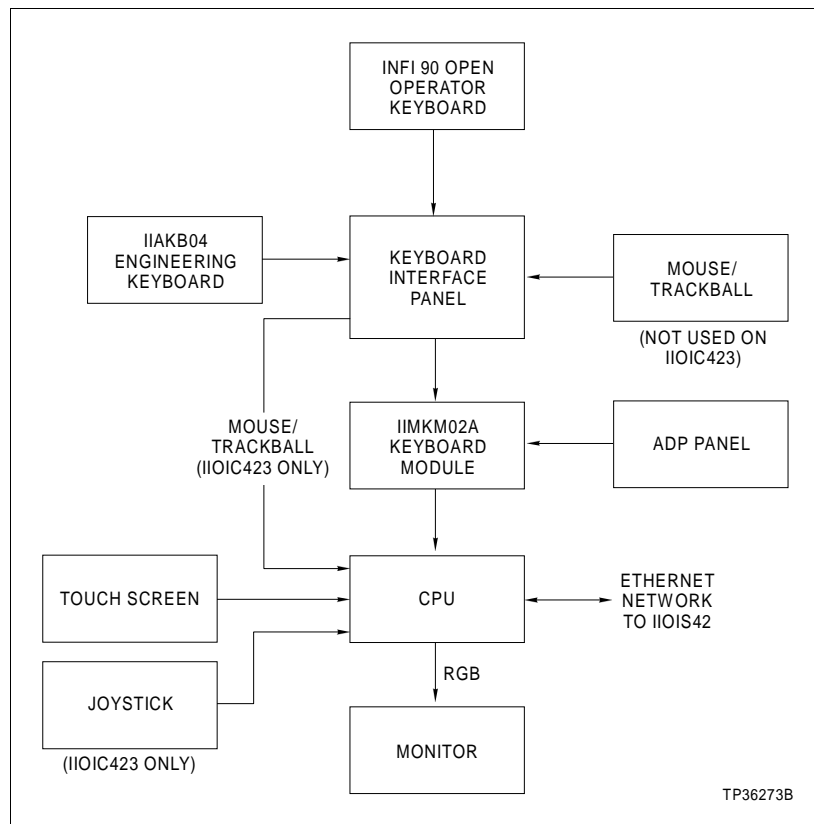
Figure 2-2. IIOIC42 Block Diagram

SECTION 3 - INSTALLATION

INTRODUCTION

This section explains how to install and prepare the OIC consoles. This section is a guide for the system engineer or technician. Follow the procedures in this instruction carefully to install, maintain and use the system properly. Elsag Bailey recommends reading the entire instruction before beginning the installation and powering up the console.

For other installation information, refer to the ***Site Planning and Preparation*** instruction and the appropriate OIS instruction. Refer to Table 1-3 for the instruction number.

SPECIAL HANDLING

Observe these steps when handling electronic circuitry:

> **NOTE:** Always use the Elsag Bailey Field Static Kit (part number 1948385☐1) consisting of two wrist straps, ground cord assembly, alligator clip, and static dissipating work surface when working with static sensitive devices. The kit is designed to connect the technician and the static dissipating work surface to the same ground point to prevent damage to the static sensitive devices by electrostatic discharge.

Use the static grounding wrist strap when installing and removing modules. Static discharge may damage static sensitive devices on modules in the cabinet. Use grounded equipment and static safe practices when working with static sensitive devices.

1. ***Use static shielding bag***. Keep the modules in static shielding bag until you are ready to install them in the system. Save the bag for future use.

2. ***Ground bags before opening***. Before opening a bag containing an assembly with static sensitive devices, touch it to the equipment housing or ground to equalize charges.

3. ***Avoid touching circuitry***. Handle assemblies by the edges; avoid touching the circuitry.

4. ***Avoid partial connection of static sensitive devices***. Verify that all devices connected to the modules are properly grounded before using them.

5. ***Ground test equipment***.

6. *Use An Antistatic Field Service Vacuum*. Remove dust from the cards if necessary.

7. *Use a grounded wrist strap*. Connect the wrist strap to the appropriate grounding plug on the power entry panel. The grounding plug on the power entry panel is connected to the cabinet chassis ground.

8. *Do not use lead pencils to set dipswitches*. To avoid contamination of switch contacts that can result in circuit board malfunction, do not use a lead pencil to set a dipswitch.

UNPACKING AND INSPECTION

Follow these steps for general handling:

1. Examine the console to make sure that no damage has occurred in transit.

2. Notify the nearest Elsag Bailey sales office of any damage.

3. File a claim for any damage with the shipping company that handled the shipment.

4. Use the original packing material or container to store the console.

5. Store the console in a place with clean air; free of extremes of temperature and humidity. Refer to Section 1 for the console specifications.

WARNING	**Verify all covers are installed and all doors are closed before operating the console. Exposed electrical connections present a shock hazard that can cause injury or death.**
AVERTISSEMENT	**Assurez-vous que tous les couvercles sont installés et toutes les portes fermées avant de faire fonctionner la console. L´exposition à des connexions électriques presénte un risque de blessure ou d´électrocution fatale.**

Do not remove or install circuit boards with power applied to the console. The circuit board may be damaged. Remove power to all AC wiring when removing or connecting AC wires to prevent personal injury and equipment damage. Remove DC power to all DC wiring when removing or connecting DC wires or circuit boards to prevent personal injury and equipment damage.

INSTALLATION PROCEDURE

The following steps outline the required procedure to complete the installation of the OIC console. Follow all related safety procedures when doing these steps.

> **NOTE:** Before removing the multibus keyboard module from the multibus card cage or doing maintenance on equipment containing static sensitive devices, read *SPECIAL HANDLING*.

1. Install the cabinet or panel. Refer to the dimension drawings and instructions in the installation and setup sections found later in this section.

2. Vibration during shipping and handling may unseat the multibus keyboard module and connections, causing problems. Verify that the module is seated and that all terminal block screws and stud fasteners are tight.

3. Refer to *IIMKM02A MULTIBUS KEYBOARD MODULE* in Section 6 to check the jumper settings.

4. Connect OIC consoles to the OIS. Refer to the installation and setup procedure for the OIC model being installed.

5. Verify that no power is present to the OIC when making power wiring connections. Wire AC power according to the procedures in *OIC INSTALLATION*. Refer to the *Site Planning and Preparation* instruction, the power requirements in Section 1 and *AC POWER WIRING GUIDELINES* in this section.

> **NOTES:**
> 1. Verify that the incoming voltage meets the rating on the label of TB1 on the power entry panel and Table 1-5.
>
> 2. Make certain the OICs being installed are powered using the same power source and ground as the OIS console. Failure to do so may cause improper operation.

6. After completing the wiring:

• Check that the keyboards and printers are connected to the correct port. Refer to the appropriate wiring connections and cabling section and *PERIPHERALS*.

• Ethernet network cable requires a terminator at each end of the cable.

• Check the AC voltage sources for proper voltage and current values. Refer to the specifications in Section 1 and AC test in Section 4.

• Apply power. If problems occur, refer to Section 4 for troubleshooting information.

AC POWER WIRING GUIDELINES

CAUTION	**Make sure that all voltage labels and voltage switch settings on the peripheral devices, power supply and power entry panel show the correct operating voltage. Equipment damage may result if the incorrect voltage is connected. Make sure the console main power circuit breaker is off before changing operating voltage setting or equipment damage may result.**
ATTENTION	**Assurez-vous que toutes les indications de tension et tous les réglages de tension sur les périphériques, le bloc d´alimentation et le panneau d´entrée des alimentations correspondent bien à la tension de service. Une tension incorrecte risque d´endommager l´equipment. Assures-vous que le disjoncteur d´alimentation principal de la console est étient avant de modifier les réglages de tension de service afin d´éviter d´endommager l´équipment.**

IIOIC422 AC power input connects to a terminal block on the power entry panel. The power entry panel location and part number will vary according the IIOIC42 model selected. The IIOIC421 (tabletop model) does not use the power entry panel. It has a rear connector panel with an IEC style AC input on the keyboard interface assembly. Refer to the following sections under *OIC INSTALLATION* for detailed AC power wiring connection procedures. The operator interface console can operate from 120/240 VAC, 50/60 hertz. The power entry panel provides line filtering, transient suppression and a 20-amp circuit breaker.

Setting up the IIOIC42 console for 240 VAC requires no changes. The power supply is autosensing. Refer to Section 6 for more power supply information. The color monitor is autosensing and needs no changes for 240-VAC operation. Monitors by other vendors may require changes. The CPU is also autosensing and needs no change for 240-VAC operation.

The recommended minimum size for power wiring is 14 AWG copper wire with a 600 volt, 75-degrees Celsius (167-degrees Fahrenheit) rating and thermoplastic insulation. Wire with a 300-volt or 150-volt rating may be used if it is accepted by local wiring codes. Wiring must be protected by cable trays or conduit and suited for the service voltage.

Power wiring to the OIC console must include a third-wire grounding conductor. This grounding conductor must not be a smaller gauge than the power wiring and must be either bare, green colored or green/yellow colored if insulated. The grounding conductor must be terminated at the system safety ground connection on the front of the power entry panel.

Over-current protection provided for the AC distribution must be sized to allow for the inrush current required by the OIC hardware. Refer to the specifications in Section 1 for the peak inrush current and duration for the OIC console.

For more information on power wiring, grounding, line conditioning and EMI (electromagnetic interference), refer to the *Site Planning and Preparation* instruction.

AC OUTLETS

CAUTION	Remove power from all equipment and the console before installing or removing peripheral equipment. Equipment damage may result.
ATTENTION	Coupez l´alimentation des périphériques et de la console avant d´installer ou de retirer des périphériques, sinon l´équipment risque de subir des dommages.

The number of AC outlets varies according to the OIC42 model being used.

NOTE: Do not connect motors, lights or test equipment to the AC outlets. Electrical noise may cause data to be lost or changed.

OIC INSTALLATION

This section contains the installation and setup instructions for the IIOIC421 tabletop, IIOIC422 console, IIOIC423 environmental cabinet and IIOIC424 panel mounted auxiliary terminals. Follow all cautions and warnings.

The OIC console is internally wired when it is shipped. Connect the communication loop cables, AC power and any peripheral devices. Peripheral devices connect to the front of the power entry panel, or to the keyboard interface assembly front panel (IIOIC421 tabletop). Table 3-1 contains the color codes for the wiring in the OIC console.

Table 3-1. OIC Wiring Color Codes

Color	Function
Brown	AC hot (inside PEP chassis only)
Blue	AC neutral
Green/Yellow	AC common
Brown	+5 VDC
White/Green	DC common
Violet	-12 VDC
White/Violet	+12 VDC

Table 3-1. OIC Wiring Color Codes (continued)

Color	Function
Green	-Remote voltage sense signal wire
White	+Remote voltage sense signal wire

Follow local wiring codes when wiring and installing cableways or conduit. For more information, refer to the **Site Planning and Preparation** instruction.

IIOIC421 Tabletop Installation and Setup

WARNING	**Verify all covers are installed and all doors are closed before operating the console. Exposed electrical connections present a shock hazard that can cause injury or death.**
AVERTISSEMENT	**Assurez-vous que tous les couvercles sont installés et toutes les portes fermées avant de faire fonctionner la console. L´exposition à des connexions électriques présénte un risque de blessure ou d´électrocution fatale.**

The IIOIC421 tabletop model is normally used with a floor mounted cabinet. The descriptions and procedures in this section apply only to the tabletop unit and do not apply to the cabinet. Figure 3-1 shows the dimensions of the OIC tabletop model.

IOIC421 Tabletop Wiring Connections and Cabling

The IIOIC421 tabletop operator interface console is internally wired when it is shipped. Connect the AC power and any peripheral devices. AC power input connects to the power connector on the rear of the keyboard interface assembly (Figure 3-2).

Figure 3-3 shows cabling requirements. The circled numbers illustrate the cables. Those numbers are called out in Table 3-2 which contains a description of the cabling connections.
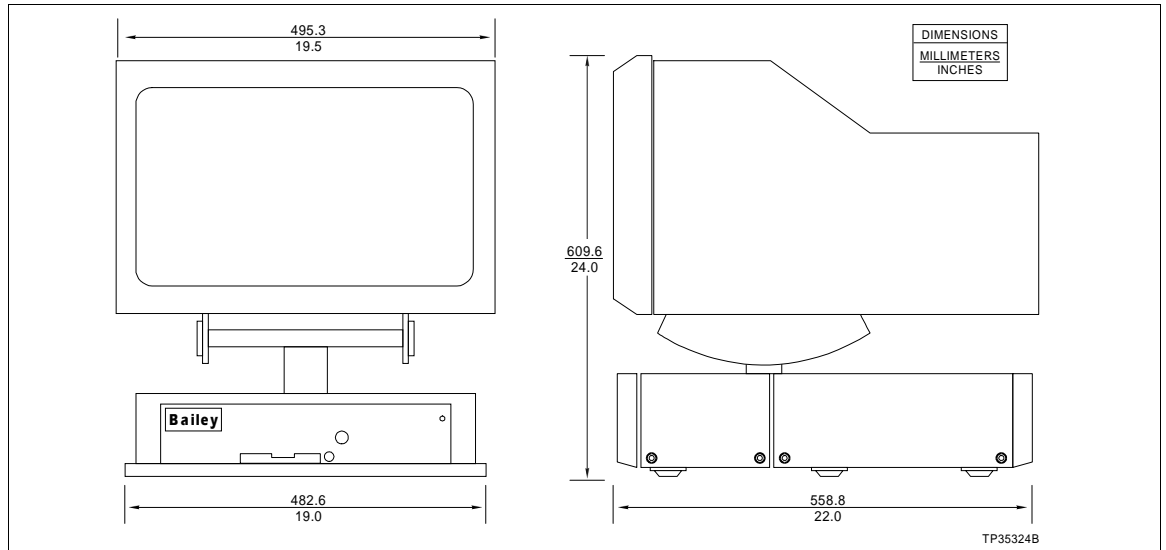
Figure 3-1. IIOIC421 Tabletop (19-inch) Dimensions
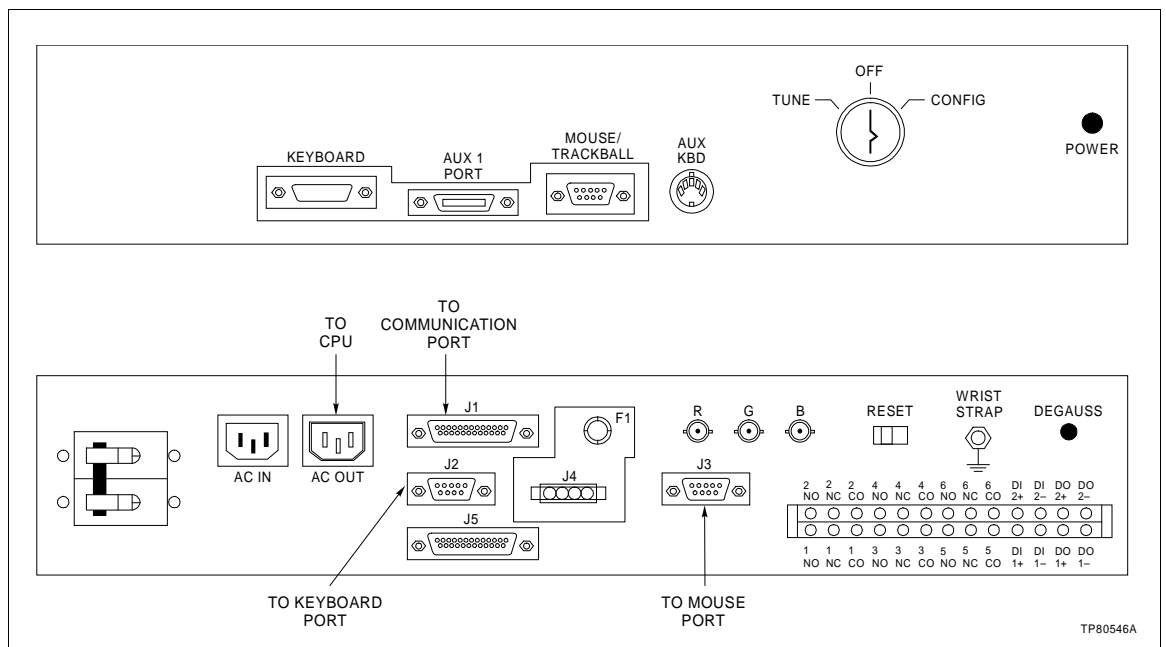
Figure 3-2. IIOIC421 Tabletop Connections (Keyboard Interface Assembly)
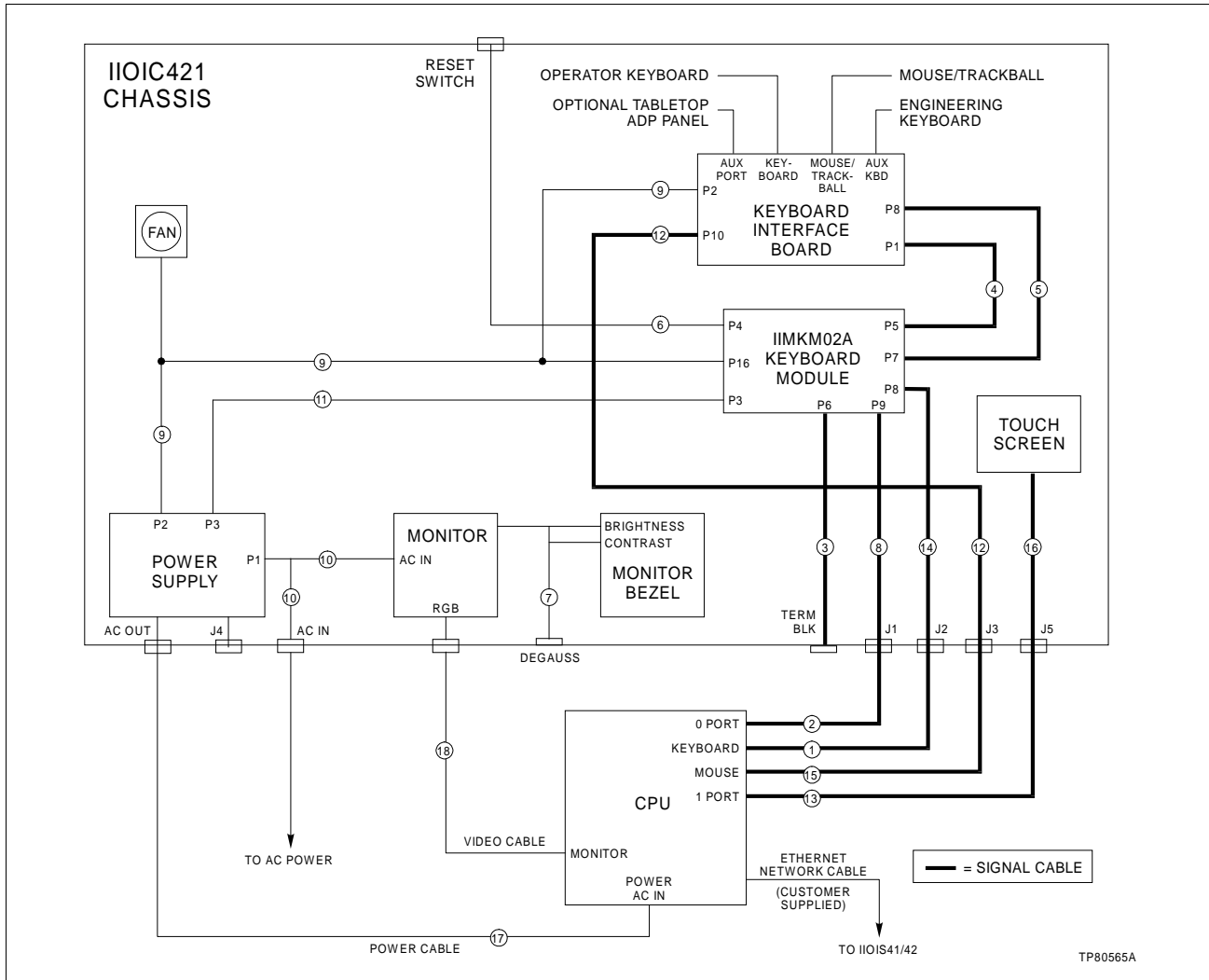
Figure 3-3. IIOIC421 Tabletop Cable Connections

Table 3-2. IIOIC421 Tabletop Cable Connections

Figure 3-3 Cable No.	Cable Number	Cable Name	Connect From	Connect To
1	6642339A1	Keyboard	J2 on chassis	Keyboard port on OIC CPU
2	6640778A1	Communication	J1 on chassis	0 port on OIC CPU
3	6634512A26N15	ADP signal	P6 on IIMKM02A	Terminal block on chassis
4	6634512A26N15	I/O distribution	P5 on IIMKM02A	P1 on keyboard interface board
5	6634512A26N15	I/O distribution	P7 on IIMKM02A	P8 on keyboard interface board
6	6638719A2	Reset cable	P4 on IIMKM02A	Reset switch on power entry panel
7	6638720A6	Monitor bezel controls	Degauss on chassis	Brightness on bezel contrast on bezel monitor
8	6639117A1	I/O signal	P9 on IIMKM02A	J1 on chassis (inside)
9	6639211A1	Power	P2 on power supply	Cooling fan P2 on keyboard interface board P16 on IIMKM02A

Table 3-2. IIOIC421 Tabletop Cable Connections (continued)

Figure 3-3 Cable No.	Cable Number	Cable Name	Connect From	Connect To
10	6639212A1	AC power	Power in on chassis	P1on power supply AC IN on chassis
11	6639213A1	PFI sense	P3 on IIMKM02A	P3 on power supply
12	6639637A1	Keyboard data	P10 on keyboard interface board	J3 on chassis (inside)
13	6640778A2	Touch screen	J5 on chassis	1 port on the OIC CPU
14	6640857A1	Keyboard signal	P8 on IIMKM02A	J2 on chassis (inside)
15	6642341A1	Mouse	J3 on chassis	Mouse port on OIC CPU
16	6642342A1	Touch screen	Touch screen board	J5 on chassis
17	Power cable	Power	AC IN on OIC CPU	AC OUT on chassis
18	1949448A1	Video (RGB)	Monitor port on OIC CPU	RGB on table top chassis

IIOIC422 Console Setup and Installation

The OIC and OIS consoles are similar, except the OIC console has no floppy disk drives or network interface unit. The cabinet size and installation are the same. Figure 3-4 shows the dimensions.

Before the OIC console cabinet is set into place in a control room, insure that the floor is level in the area where the cabinets will be set. Make sure the location can accommodate the console. Figure 3-4 shows the console cabinet and anchoring dimensions.

Adjust the leveling screws on all cabinets and connecting tables until the monitor bezel of each cabinet lines up. The leveling screws adjust 25.6 millimeters (1.05 inches). After securing the cabinets, put the tables on the cabinets and lock them into place by sliding the red handle above the front access door to the right until it stops at the bottom of the slot.

The tabletops are adjustable. The brackets supporting the tabletops are bolted through oversize holes. Loosen the bolts and move the top up to 6.35 millimeters (0.25 inches) up, down, forward or back toward the cabinet to line up the tabletop.

Two chrome table alignment pins shipped inside the brass bushings located on each side of each tabletop. When two tabletops are lined up, push the pins outward into the bushing of the table to the right of the cabinet. Tighten the three bolts on each tabletop support bracket. Figure 3-5 shows the keyboard table. Figure 3-6 shows the 15 degree wedge table dimensions, and Figure 3-7 shows the 45 degree wedge table dimensions.
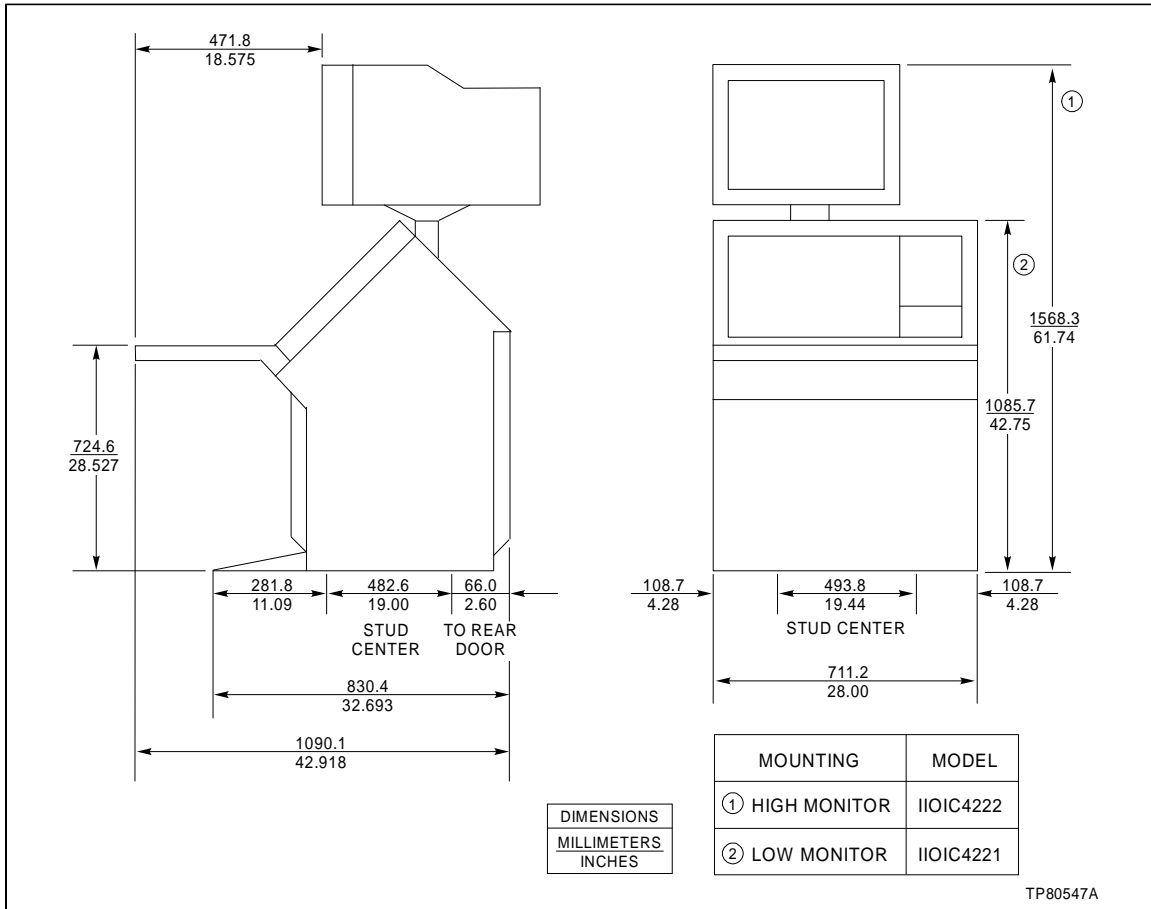
Figure 3-4. IIOIC422 Console Dimensions

Protect the wires and cabling going to the OIC console. Run cabling through conduit to the rear of the cabinet or under the floor through the bottom of the cabinet. Follow local wiring codes when wiring and installing cableways or conduit. Refer to the *Site Planning and Preparation* instruction for more information.
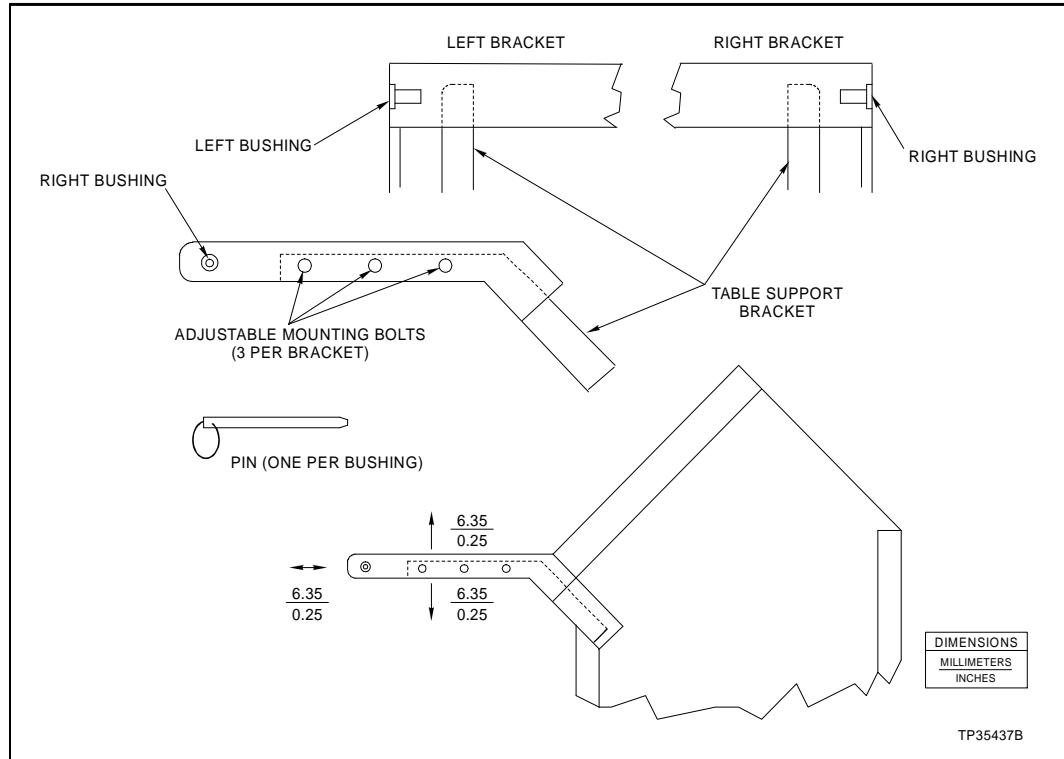
Figure 3-5. IIOIC422 Console Keyboard Table
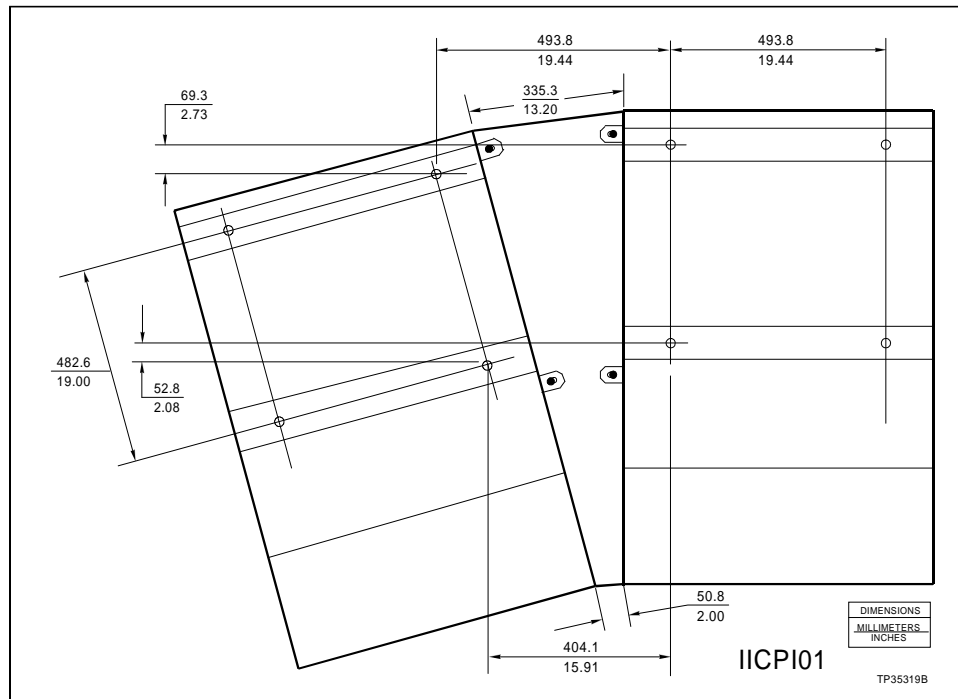
Figure 3-6. IIOIC422 Console 15 Degree Wedge Dimensions
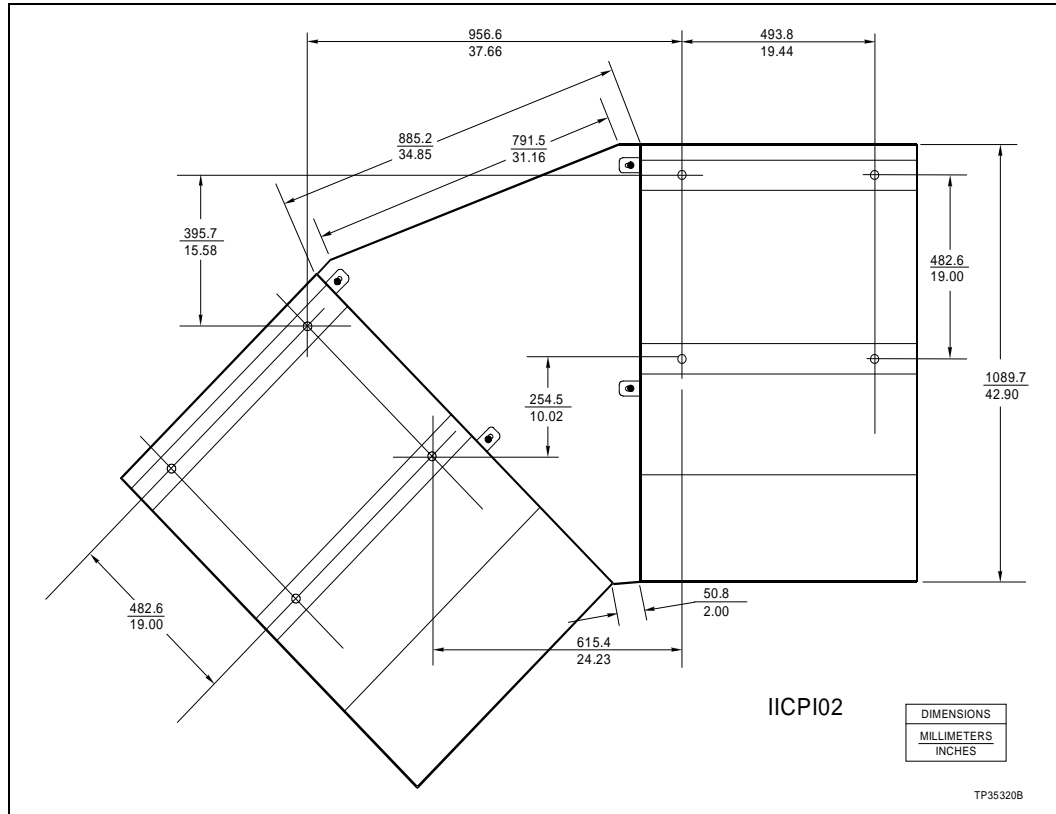
Figure 3-7. IIOIC422 Console 45 Degree Wedge Dimensions

IIOIC422 Console Wiring Connections and Cabling

The IIOIC422 console is internally wired when it is shipped. Connect the AC power and any peripheral devices. Refer to Section 6 for specific instructions on installing and configuring replacement components.

1. Wire AC power to the proper terminals of the power entry panel. Refer to Figure 3-8 for AC input terminal location.

> **NOTE:** Verify that the incoming voltage meets the rating on the label of TB1.

2. Connect only 120/240 VAC at 50/60 hertz into the terminal block on the power entry panel.

Figure 3-9 shows the IIOIC422 cable connections. The circled numbers represent the cables. Table 3-3 contains the list of those cables and connection descriptions.

> **NOTE:** If remote monitors are being installed in the OIC console, be sure they are powered using the same power source and ground as the OIS and OIC console to reduce the chance of communication problems on the network. Failure to do so may cause data to be changed or lost.
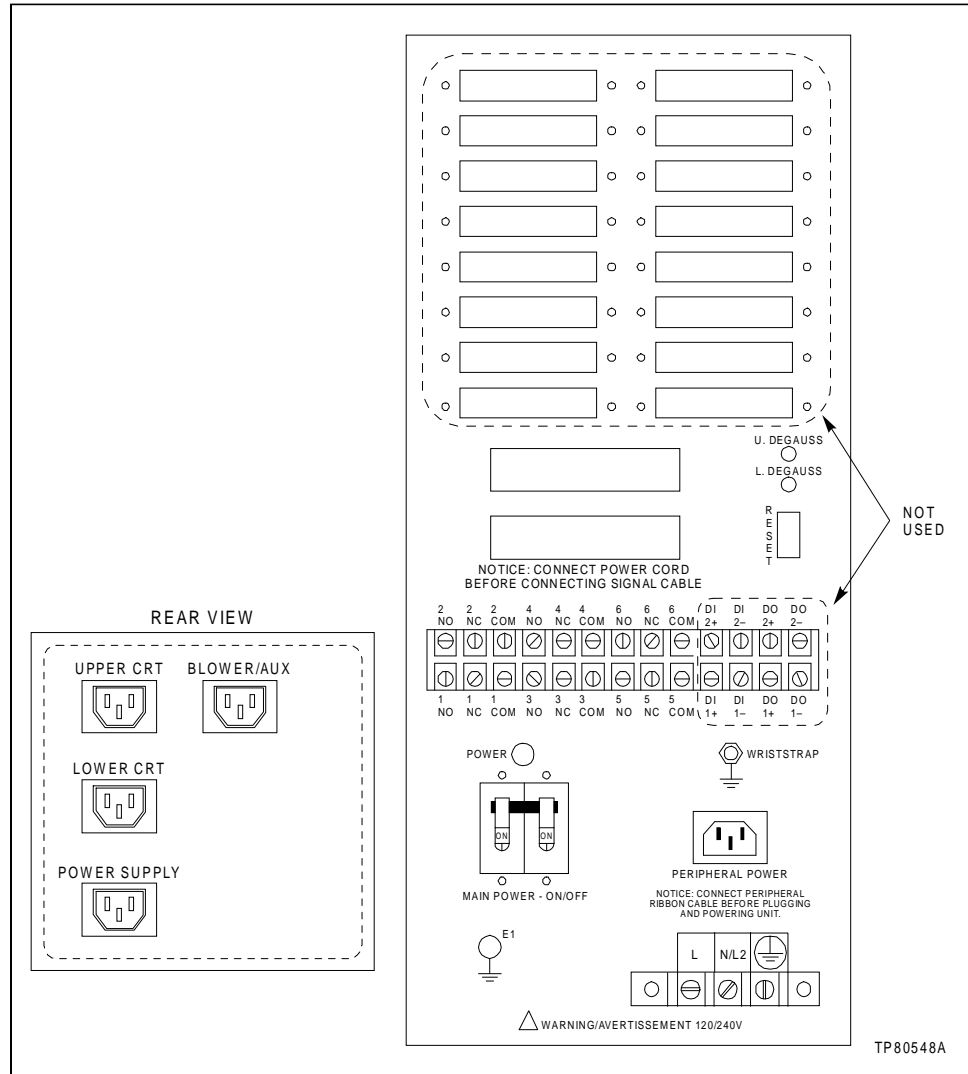
Figure 3-8. IIOIC422 Console Power Entry Panel Connections
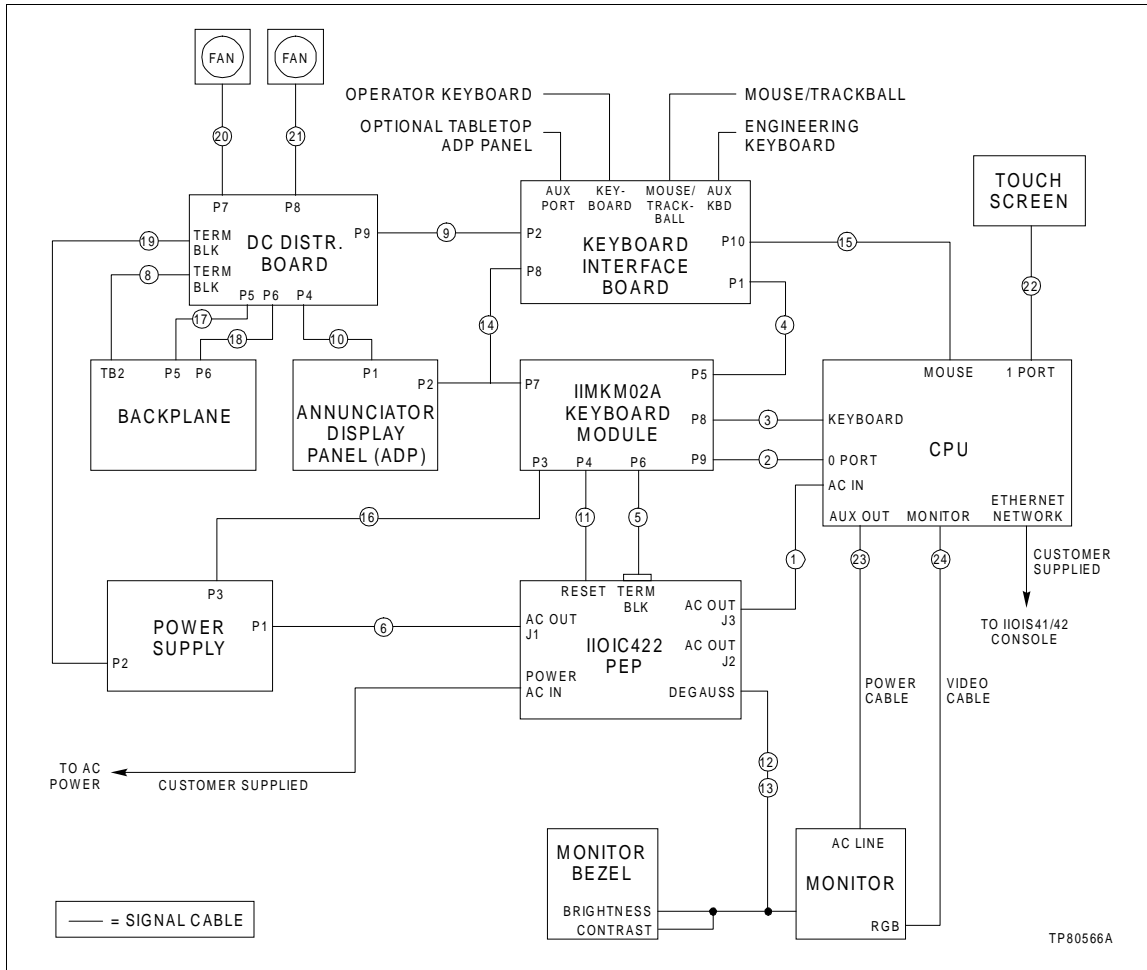
Figure 3-9. IIOIC422 Console Cable Connections

Table 3-3. IIOIC422 Console Cable Connections

Figure 3-9 Item No.	Cable Number	Cable Name	Connect From	Connect To
1	1947950A5	AC power	J3 on power entry panel	AC IN on OIC CPU
2	6639637A4	I/O signal	P9 on IIMKM02A	0 port on OIC CPU
3	6642339A1	Keyboard	P8 on IIMKM02A	Keyboard port on OIC CPU
4	6634512A26N72	I/O distribution	P5 on IIMKM02A	P1 on keyboard interface board
5	6634512A26N72	I/O distribution	P6 on IIMKM02A	Rear of terminal block on power entry panel
6	6637599A1	AC power	J1 AC OUT on power entry panel	P1 on power supply
7	6637776A2	Wrist ground	User	Wrist connector on power entry panel
8	6638708A1	DC power	TB2 on backplane	Terminal block on DC distribution board
9	6638713A1	Peripheral power	P2 on keyboard inter-face board	P3 on DC distribution board

Table 3-3. IIOIC422 Console Cable Connections (continued)

Figure 3-9 Item No.	Cable Number	Cable Name	Connect From	Connect To
10	6638713A2 or 6639106A1	Peripheral power	P1 on ADP board controller	P4 on DC distribution board
11	6638719A1	Reset cable	Reset switch on power entry panel	P4 on IIMKM02A
12	6638720A4	Lower monitor bright	9-pin connector on rear of monitor	Monitor bezel brightness and monitor bezel contrast and degaussing switch on power entry panel
13	6638720A5	Upper monitor bright	9-pin connector on rear of monitor	Monitor bezel brightness and monitor bezel contrast and degaussing switch on power entry panel
14	6638849A1	ADP signal	P7 on IIMKM02A	P8 on keyboard interface board P2 on ADP panel
15	6642341A1	Mouse signal	P10 on keyboard interface board	Mouse port on OIC CPU
16	6640113A4	PFI sense	P3 on power supply	P3 on IIMKM02A
17	6640368A1	Power	P5 on DC distribution board	P5 on backplane
18	6640368A1	Power	P6 on DC distribution board	P6 on backplane
19	6640369A1	DC power	P2 on power supply	Terminal block on DC distribution board
20	6640640A2	DC Power	P7 on DC distribution board	IIOIC4221 and IIOIC4222 Cable P2 to fan on card cage
21	6640640A3	DC Power	P8 on DC distribution board	IIOIC4221 Cable P2 to fan on lower monitor Cable P3 to fan on lower monitor Cable P4 to fan on lower monitor IIOIC4222 Cable P2 to fan on lower monitor Cable P3 to fan on lower monitor Cable P4 not used
22	6640778A2	Touch screen	Connector on touch screen board	1 port on OIC CPU
23	Power cable	AC power	AC power out (AUX OUTLET) on OIC CPU	AC power connector on monitor
24	1949448A1 (IIOIC4221) 1949448A2 (IIOIC4222)	Video (RGB)	Monitor port on OIC CPU	RGB on monitor

IIOIC423 Environmental Setup and Installation

Before the OIC environmental console is set into place, insure that the floor is level in the installation area. The unit must be secured to the floor before it is wired or operated. Figure 3-10 shows the cabinet dimensions. The dimensions for the mounting bolts are shown in Figure 3-11.

NOTE: The IIOIC423 console has a built-in air conditioner that produces condensate. Install a drain to accommodate the water.

Protect the wires and cabling going to the OIC environmental cabinet. Run cabling through conduit to the bottom of the cabinet. Follow local wiring codes when wiring and installing cableways or conduit. Refer to the **Site Planning and Preparation** instruction for more information.

NOTE: The power entry panel has a connector for AC input and alarm relay outputs (24 VDC) and cable connectors for peripheral devices. The alarm relay outputs are for alarm annunciation only.
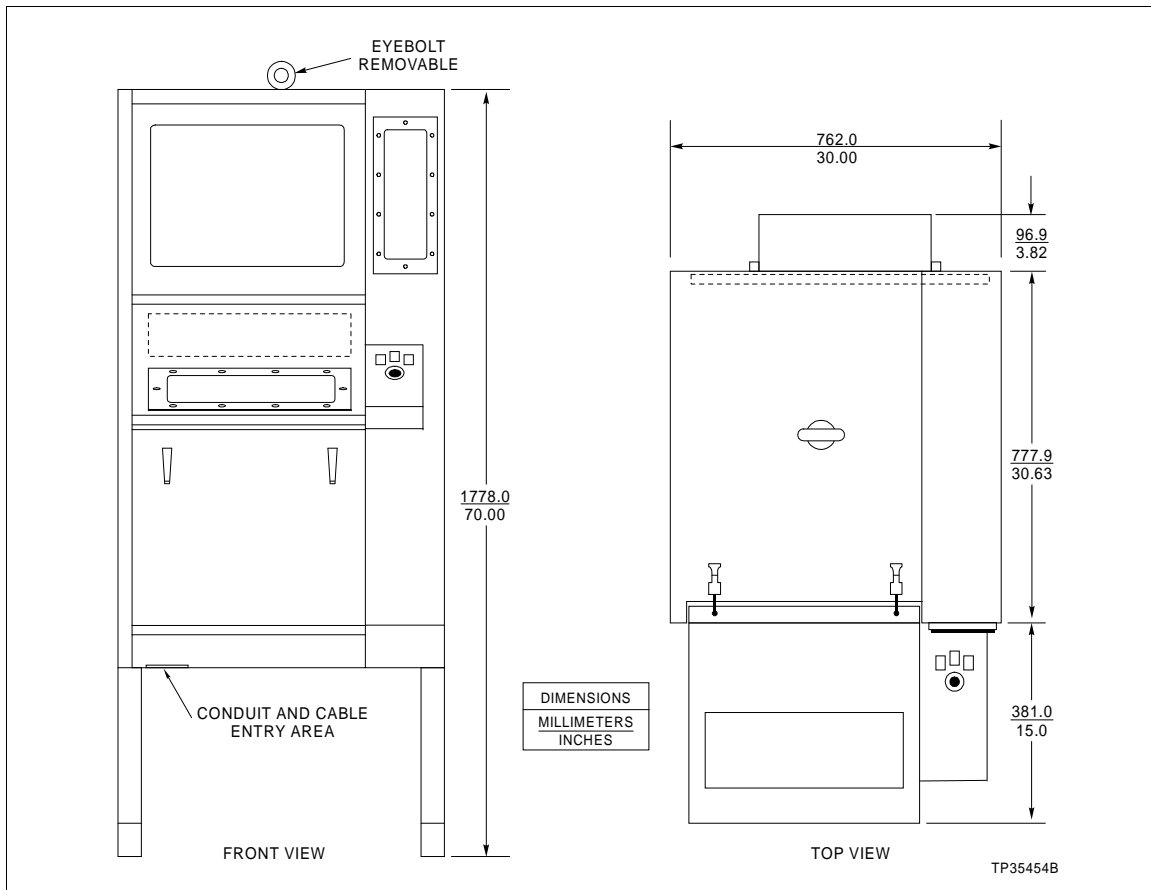
Figure 3-10. IIOIC423 Environmental Cabinet Dimensions
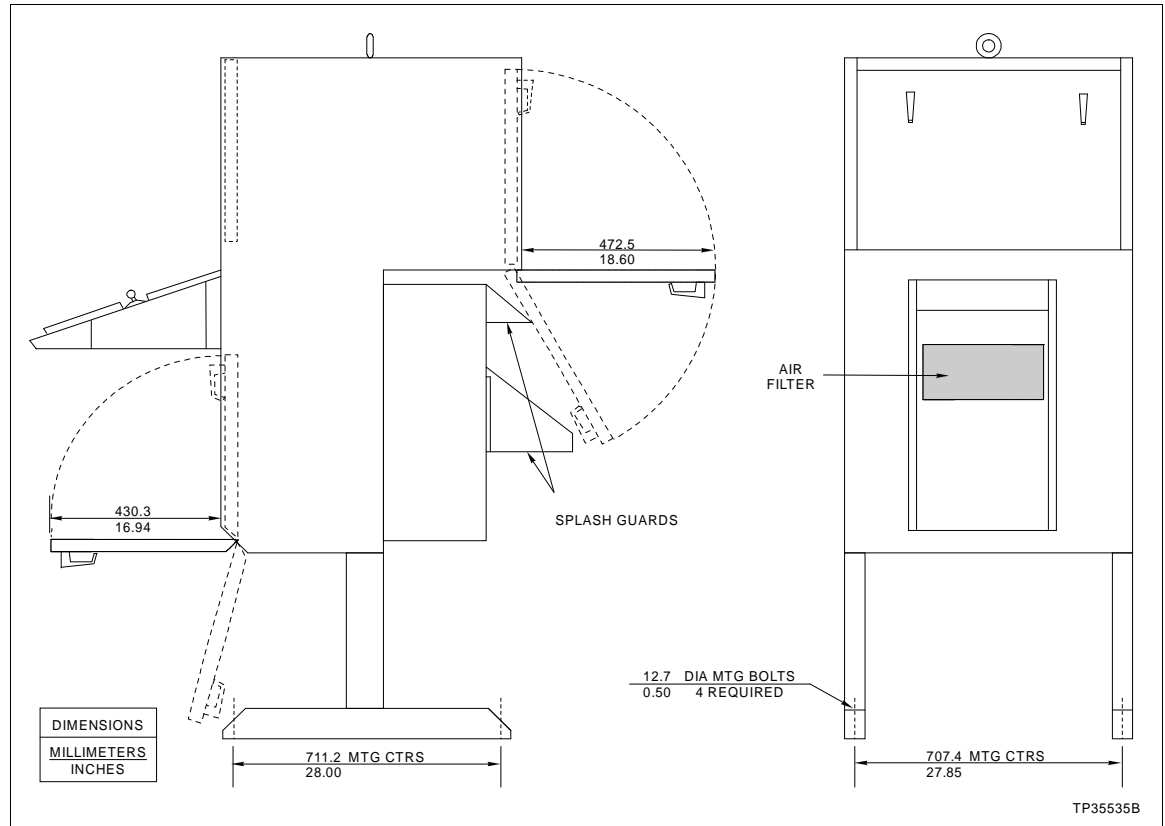
Figure 3-11. IIOIC423 Environmental Cabinet Anchoring Dimensions

IIOIC423 Environmental Wiring Connections and Cabling

The IIOIC423 operator interface console is internally wired when it is shipped. Connect the AC power and any peripheral devices. The power entry panel provides line filtering, transient suppression and a 20-amp circuit breaker.

1. Wire AC power to the proper terminals of the power entry panel. Refer to Figure 3-12 for AC input terminal location.

> **NOTE:** Verify that the incoming voltage meets the rating on the label of TB1. Connect only 120/240 VAC at 50/60 hertz into the terminal block on the power entry panel.

2.   Connect only 120/240 VAC at 50/60 hertz into the terminal block on the power entry panel.

3. Make certain the 120/240 VAC switch is in the proper position.

Table 3-4 has a list of circled cables and a description of the cable connections. The cable connections are shown in Figure 3-13. Circled numbers represent the cables.
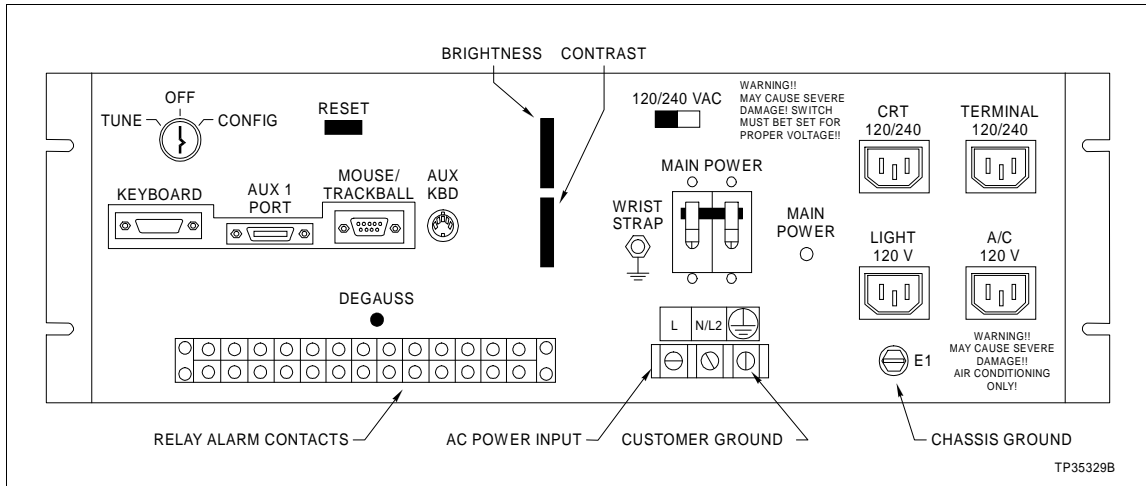
Figure 3-12. IIOIC423 Environmental Cabinet Power Entry Panel Connections

Table 3-4. IIOIC423 Cable Connections

Figure 3-13 Item No.	Cable Number	Cable Name	Connect From	Connect To
1	1947950A5	Power	J2 on power entry panel	AC IN on monitor
2	6639637A4	Communication	P9 on IIMKM02A	0 port on OIC CPU
3	6642339A1	Keyboard	P8 on IIMKM02A	Keyboard port on OIC CPU
4	6634512A26N15	I/O distribution	P5 on IIMKM02A	P1 on keyboard interface board
5	6638713A1	Power	P1 on DC distribution board	P16 on IIMKM02A board
6	6638713A1	Power	P3 on DC distribution board	P2 on keyboard interface board
7	6638713A4	Power	P4 on DC distribution board	P1 on NADS03 board
8	6638719A1	Reset cable	P4 on IIMKM02A	Reset switch on power entry panel
9	6638720A6	Monitor bezel controls	Brightness on power entry panel Contrast on power entry panel Degauss on power entry panel	Brightness on bezel Contrast on bezel Monitor
10	6638849A1	NADS03 signal	P7 on IIMKM02A	P2 on NADS03 board P8 on keyboard interface board
11	6639212A2	Power	J1 on power entry panel	P1 on power supply
12	6639213A1	PFI sense	P3 on IIMKM02A	P3 on power supply
13	6639513A1	Power	Terminal block on DC distribution board	P2 on power supply
14	6640778A2	Touch screen	Connector on touch screen board	1 port on OIC CPU
15	Customer	Console power	Power source	AC in on power entry panel

Table 3-4. IIOIC423 Cable Connections (continued)

Figure 3-13 Item No.	Cable Number	Cable Name	Connect From	Connect To
16	Power cable	Power	AC power in on OIC CPU	AC power out on power entry panel
17	1949448A1	Video (RGB)	Monitor port on OIC CPU	RGB on monitor
18	Supplied with air conditioner	AC power	AC out on power entry panel	Air conditioner
19	Supplied with joy-stick	Joystick	Joystick	Mouse port on OIC CPU
20	6634512A26N38	Distribution	P6 on IIMKM02A	Terminal block on power entry panel
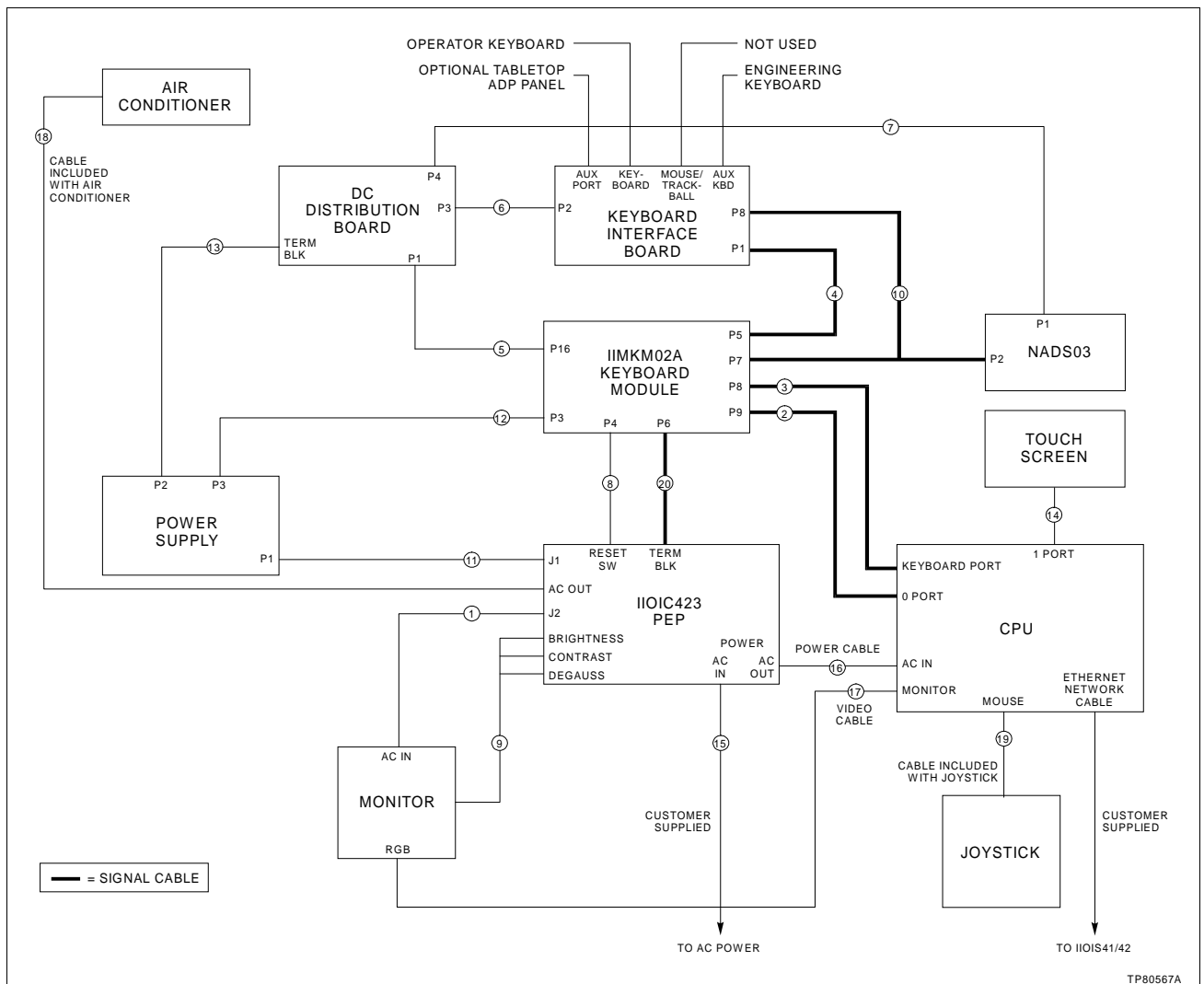
Figure 3-13. IIOIC423 Environmental Cabinet Cable Connections

Bailey®

IIOIC424 Panel Mount Installation and Setup

Before the OIC console is set into place, insure that the supporting panel is strong enough to support the monitor. Figure 3-14 shows the monitor and keyboard interface assembly cut-out dimensions. Use the following procedure to mount the panel:

1. The bezel must be removed before mounting the unit to the panel. Remove the two cover mounting screws and remove top cover.

2. Disconnect the brightness/contrast cable at the CRT and degauss switch at the power entry panel. Disconnect AC power cord and CRT and any external cables from the power entry panel, if necessary. Remove the power entry panel.

3. Remove the four CRT mounting screws and move the CRT forward to expose bezel mounting screws.

4. Remove the four bezel mounting screws and remove the bezel.

5. Reverse the procedures when the unit is installed in the panel. Torque all fasteners to 39.8 Nm (40 in.-lbs.).

The back of the power entry panel has a connector for AC input, alarm relay outputs (24 VDC) and the monitor cables. The keyboard interface assembly is mounted on a separate panel. It has the connectors for operator devices such as keyboard, trackball or mouse, and a tune/off/configuration keyswitch. The alarm relay outputs are for alarm annunciation only.
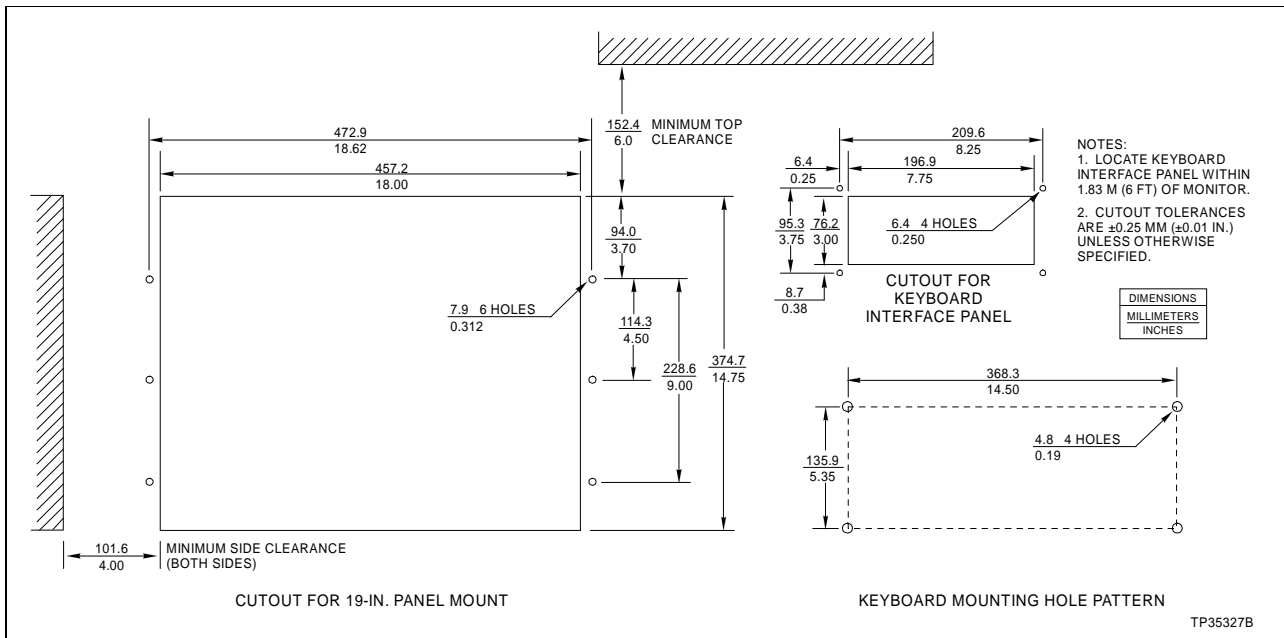
Figure 3-14. IIOIC424 Panel Mount Dimensions

IIOIC424 Panel Mount Wiring Connections and Cabling

The IIOIC424 panel mount console is internally wired when it is shipped. Connect the AC power and any peripheral devices. The power entry panel provides line filtering, transient suppression and a ten-amp circuit breaker.

1. Plug in AC power to the power connector.

2. Refer to Figure 3-15 for AC input location.

Cable connections are shown in Figure 3-16. Table 3-5 is a list of the cable connections.
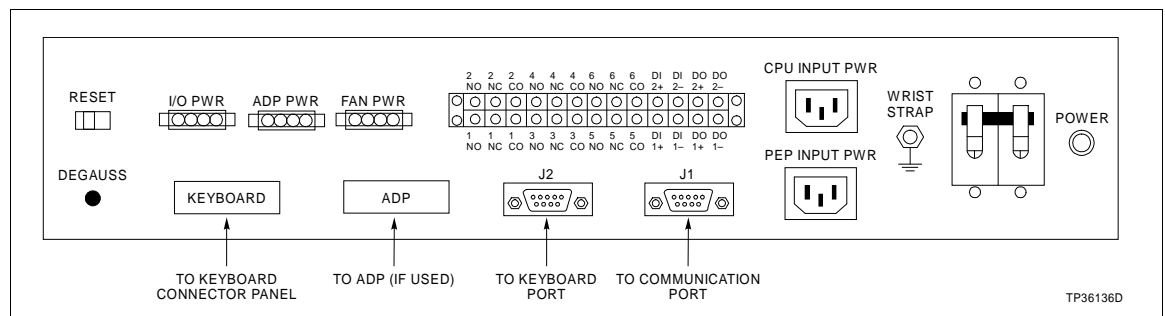
Figure 3-15. IIOIC424 Panel Mount Power Entry Panel Connections

OPERATOR INTERFACE DEVICES

This section contains information and the installation instructions for the operator and engineering keyboards, mouse/trackball and the annunciator display panels.

Operator Keyboard

The KEYBOARD port on the keyboard interface assembly is for the mylar operator keyboard. The 0.9 meters (3-foot) long coiled cord can be stretched to 2.4 meters (8 feet). See Figure 3-17. Refer to Table 7-1 for the operator keyboard part number.

Engineering Keyboard

Each IIOIC42 console supports an additional engineering keyboard (QWERTY) (Figure 3-18). A 6-pin mini DIN to 5-pin DIN adapter is supplied with the keyboard. All OIC consoles have a five-pin DIN connector located on the keyboard interface board. Power does not have to be removed from the OIC console before plugging in or unplugging the keyboard. Initializing the system is not needed after plugging in or unplugging the keyboard. Keyboard mapping information is in the operation instruction.
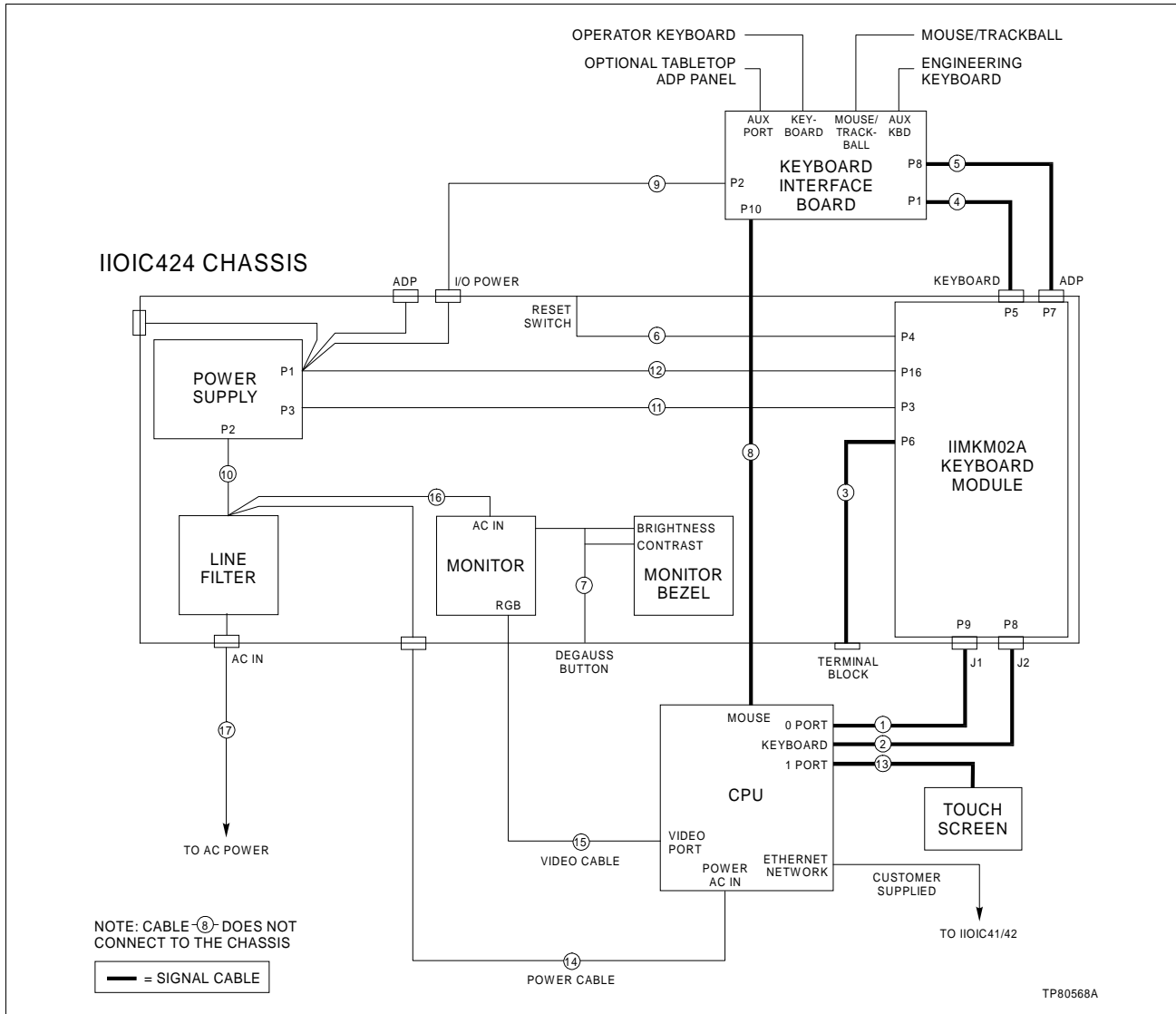
Figure 3-16. IIOIC424 Panel Mount Connections

Table 3-5. IIOIC424 Panel Mount Cable Connections

Figure 3-16 Item No.	Cable Number	Cable Name	Connect From	Connect To
1	6639637A4	Communication	J1 on chassis	0 port on OIC CPU
2	6642339A1	Keyboard	J2 on chassis	Keyboard port on OIC CPU
3	6634512A26N4	ADP signal	P6 on IIMKM02A	Terminal block on chassis
4	6634512A26N72	I/O distribution board	P5 keyboard port on chassis	P1 on I/O distribution board
5	6634512A26N72	I/O distribution board	P7 ADP port on chassis	P8 on I/O distribution board
6	6638719A2	Reset cable	P4 on IIMKM02A	Reset switch on power entry panel

Table 3-5. IIOIC424 Panel Mount Cable Connections (continued)

Figure 3-16 Item No.	Cable Number	Cable Name	Connect From	Connect To
7	6638720A6	Monitor bezel controls	Connector on monitor	Brightness on bezel Contrast on bezel Degauss on chassis
8	6642341A1	Mouse	P10 on keyboard inter-face assembly	Mouse port on OIC CPU
9	6639352A1	I/O power	P2 on keyboard inter-face assembly	I/O power port on chassis
10	6640112A2	AC power	P2 on power supply	Line filter and E1 (chassis ground)
11	6640113A1	PFI sense	P3 on IIMKM02A	J2 on power supply
12	6640164C1	DC power	P1 on power supply	P16 on IIMKM02A and KYBD ADP FAN ports on chassis
13	6640778A2	Touch screen	Connector on touch screen board	1 port on the OIC CPU
14	Power cable	Power	AC in on OIC CPU	Power out on chassis and line filter
15	1949448A1	Video (RGB)	Monitor port on OIC CPU	RGB on monitor
16	6639031A1	Filter	AC IN on monitor	Line filter
17	1947950A7	Power	AC power	AC IN on chassis

TP35387A
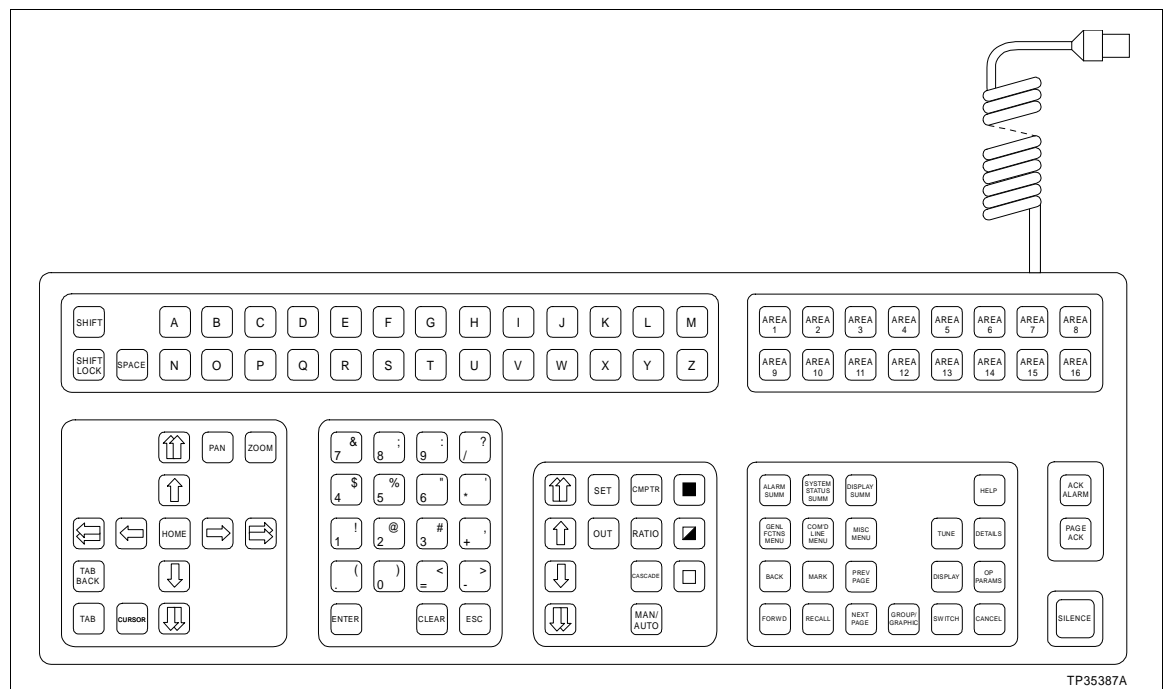
Figure 3-17. Operator Keyboard
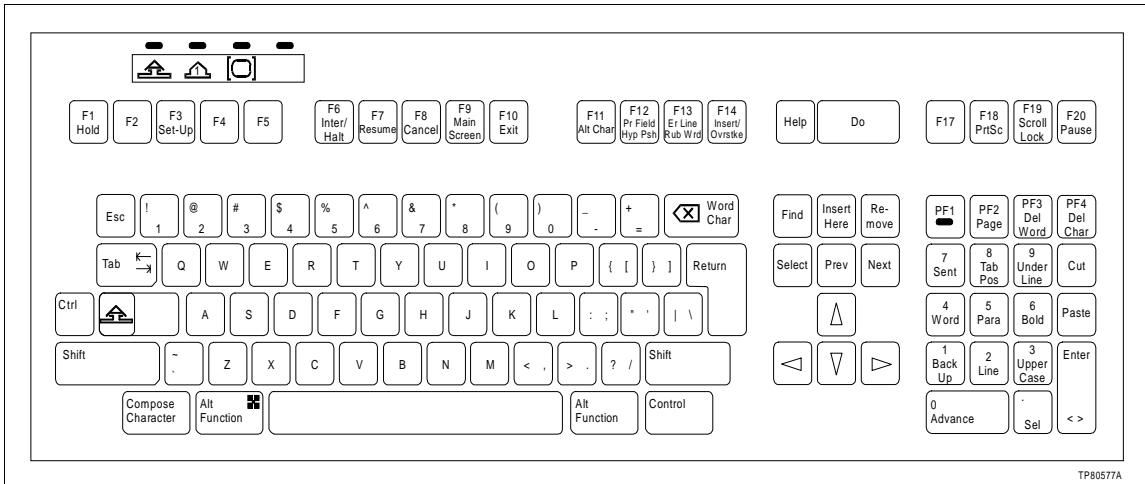
Figure 3-18. Engineering Keyboard

IIATB05 Trackball and IIAMS04 Mouse

The trackball and mouse (not used on the IIOIC423 environmental console) permit faster cursor positioning during normal operator control or configuration. The trackball or mouse plugs into the keyboard interface board at the MOUSE/ TRACKBALL port on the tabletop and console models and plugs into the keyboard interface assembly on the panel mounted model.

IIADP01 Annunciator Display Panel

The IIADP01 annunciator display panel is a tabletop unit that provides 32 LEDs and pushbuttons. This tabletop unit can be used with all units except the environmental IIOIC423 model. Each LED is assigned to a tag. Each pushbutton may be assigned to a display or a key macro. When a tag goes into an alarm condition, the assigned LED turns on. Once the LED is activated, it will continue flashing until the alarm condition is removed. Press the pushbutton to call the display or key macro assigned to it.

Up to four annunciator display panels can be driven from an MKM module. Maximum cable length is 4.5 meters (15 feet). See Figure 3-19 for the dipswitch configuration. Refer to Table 3-6 for cable connections. Refer to the operation and configuration instruction for more information.
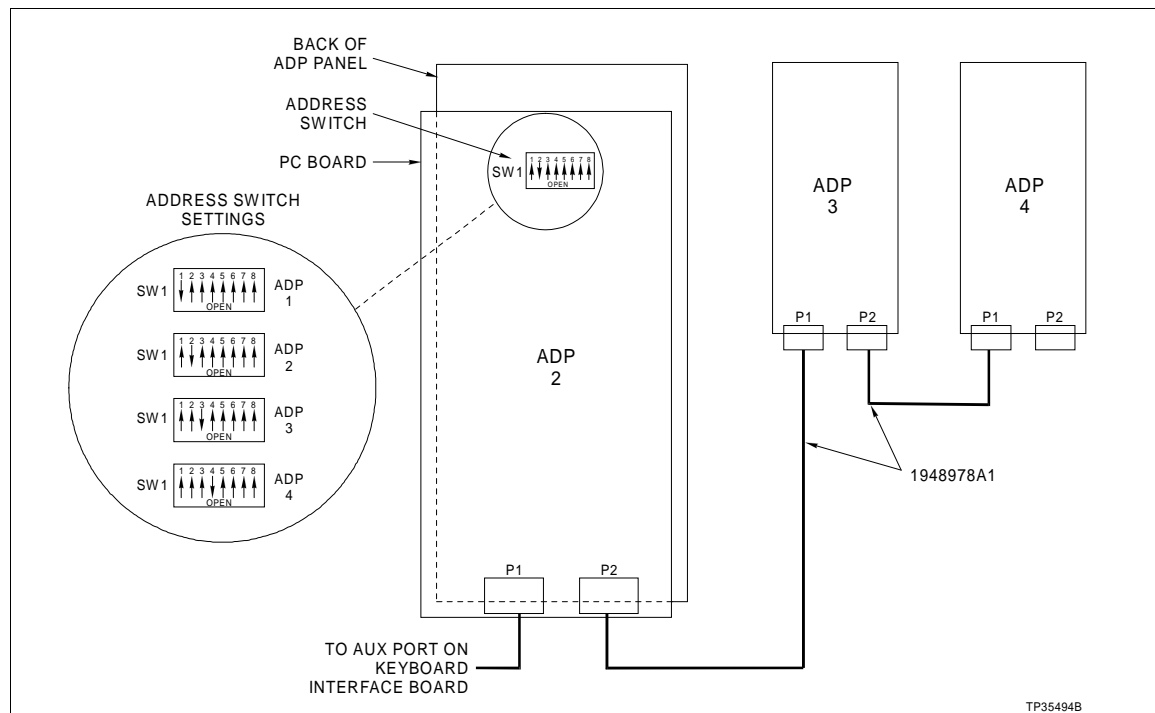
Figure 3-19. IIADP01 Annunciator Display Panel SW1 Settings

Table 3-6. IIADP01 Board Connections

Cable Number	Connect From	Connect To
1948978A1	P1 or P2 on ADP 2 board	AUX 1 port on keyboard interface board, or to: P1 or P2 on ADP 3 board

IIADP02 Annunciator Display Panel

The IIADP02 annunciator display panel provides 32 LEDs and pushbuttons. This panel is provided with the IIOIC422 console model and can be added to the IIOIC424 panel mount model. It is not used on the IIOIC423 environmental or IIOIC421 tabletop models. Each LED is assigned to a tag. Each pushbutton may be assigned to a display or a key macro. When a tag goes into an alarm condition, the assigned LED turns on. Once the LED is activated, it will continue flashing until the alarm condition is removed. Press the pushbutton to call the display or key macro assigned to it.

Up to four annunciator display panels can be driven from an MKM module. Maximum cable length is 4.5 meters (15 feet). Refer to Figure 3-20 for the dipswitch configuration. Refer to the operation and configuration instruction for more information.
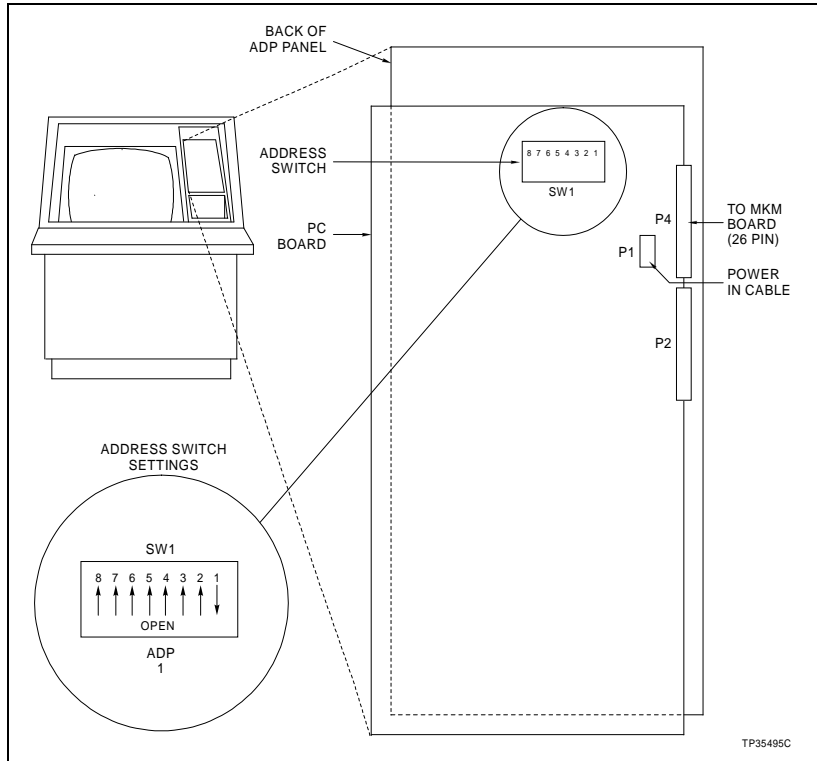
Figure 3-20. IIADP02 Annunciator Display Panel

NADS03 Annunciator Display Panel

The NADS03 annunciator display panel (ADS) provides a panel of 64 lamps and pushbuttons and is only used on the IIOCI423 environmental model. Each LED is assigned to a tag. Each pushbutton may be assigned to a display or a key macro. When a tag goes into an alarm condition, the assigned LED turns on. Press the pushbutton to call the display or key macro assigned to it.

Up to four annunciator display panels can be driven from an MKM module. Maximum cable length is 4.5 meters (15 feet). Refer to Figure 3-21 for the dipswitch configuration of the first annunciator display panel.
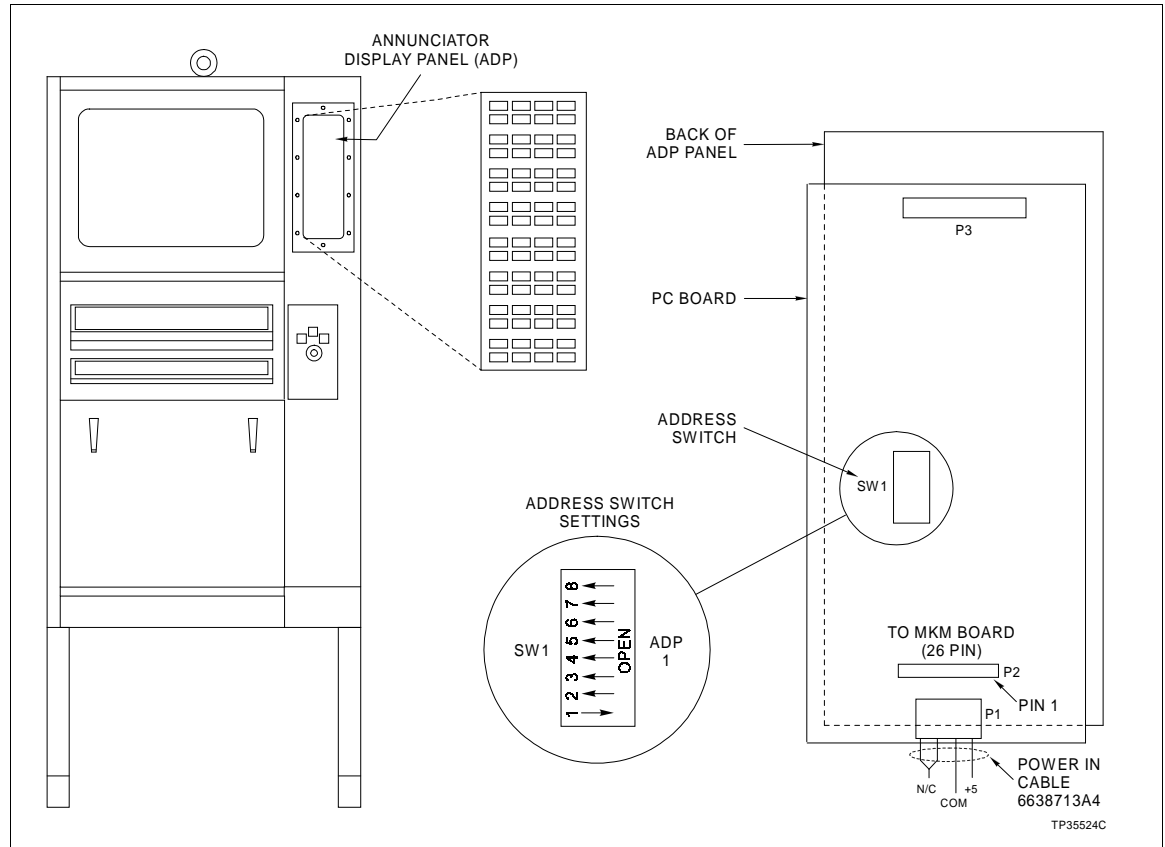
Figure 3-21. NADS03 Annunciator Display Panel SW1 Settings

Touch Screen

A touch screen accessory provides a means of selecting display options by touching the desired area on the monitor screen. This accessory can be used on all the models except the IIOIC423 environmental model and is ordered by nomenclature (Table 3-7). The touch screen controller board mounts onto the component side of the IIMKM02A module. The touch screen board interprets signals from the touch screen monitor overlay and sends them to the CPU. This accessory requires the addition of a touch screen and a touch screen controller board. Table 3-8 lists the parts included with the touch screen.

Table 3-7. Touch Screen Nomenclature

Nomenclature	Description
AOHOIC42TS1	IIOIC4221 single lower console
AOHOIC42TS2	IIOIC4222 upper CRT
AOHOIC42TS4	IIOIC424 panel mount console
AOHOIC42TS5	IIOIC421 table top console

Table 3-8. Touch Screen Parts

Part Number	Description
1948026A3	19-inch touch screen.
1948027A3	Touch screen controller board.
1948644A5	Extension cable for touch screen on the upper CRT.
6640778A2	Cable. For IIOIC4221/4222/424, use cable between controller board and port 1 of CPU. For IIOIC421, use cable between tabletop chassis (J5) and port 1 of CPU.
6642342A1	Cable. For IIOIC421 only. Cable is internally routed from touch screen board to tabletop chassis (J5).

CONTROLLER BOARD INSTALLATION

Figures 3-22 and 3-23 show the wiring connections and the dipswitch and jumper settings of the touch screen controller board. Before attaching the touch screen ribbon cable to the controller board, ground the capacitive charge on the touch screen to the monitor case ground.

1. Insert one end of a 24 AWG wire into either outside touch screen cable connector contact.

2. Press the other end of the wire to the monitor case ground.

    NOTE: Failure to perform this may damage the electronic components on the controller by the stored charge from the 25 kV anode during picture tube operation.

TOUCH SCREEN INSTALLATION

Follow the directions in the touch screen installation kit.

1. Remove the monitor. Follow the instructions in Section 6. Follow all cautions and warnings.

2. Follow the directions in the installation kit to attach the touch screen to the face of the monitor. Use the Velcro™ supplied in the kit.

3. Connect the cable to the touch screen controller card. Note that pin one on the cable has the red stripe.

4. Follow the directions in the installation kit to attach the touch screen to the face of the monitor. Use the Velcro supplied in the kit.

5. Connect the cable to the touch screen controller card. Note that pin one on the cable has the red stripe.

™ Trademark of Velcro U.S.A. Incorporated.
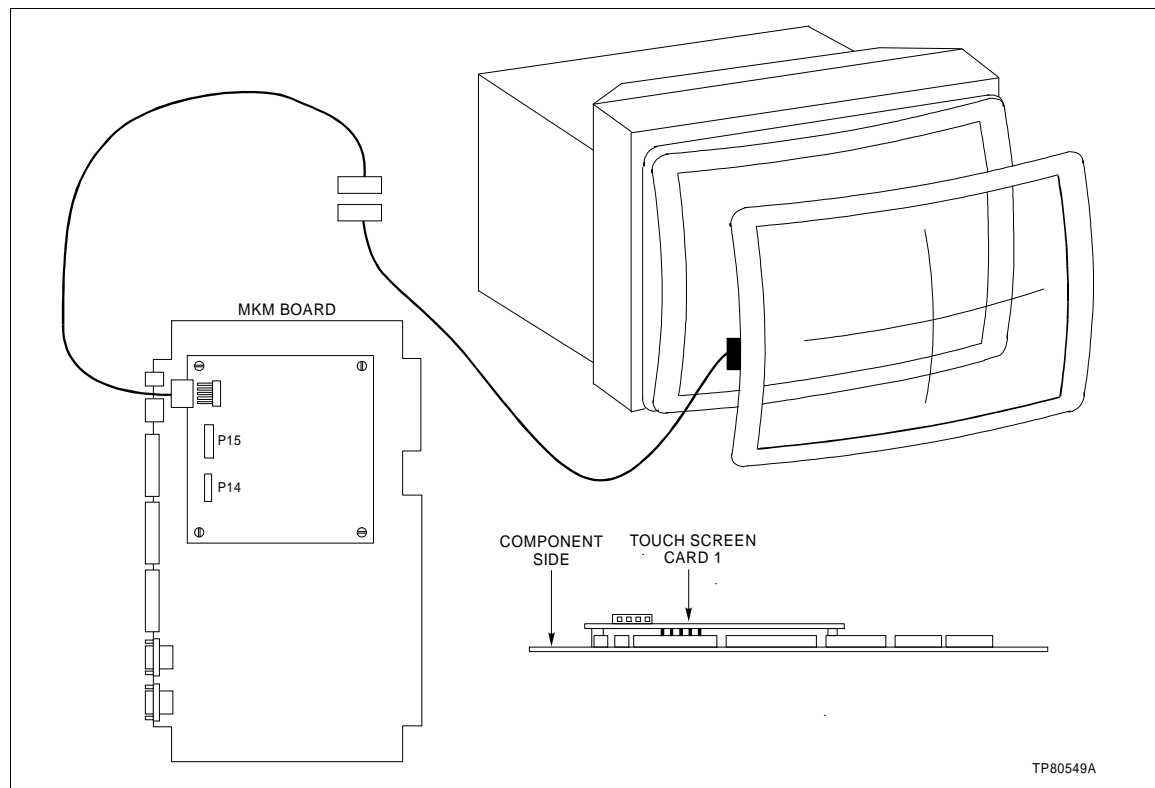
Figure 3-22. Touch Screen Controller Card Connections

6. Attach the touch screen controller card to the MKM card with the four nylon spacers and screws.

CALIBRATING THE TOUCH SCREEN

On-line calibration can be done from the console. For operating information, refer to the operation and configuration instruction.

TOUCH SCREEN JUMPER AND SWITCH SETTINGS

Jumpers J6 and J8 on the IIMKM02A keyboard module control the touch screen option (Figure 3-23). Switch S1 and S2 on the touch screen controller board must also be set.

1. Set jumpers J6 and J8 at 2 to 3 on the IIMKM02A board.

2. Jumpers J7 and J9 are for future use.

   NOTE: Setting jumpers at 2 to 3 disconnects the IIMKM02A lead. A cable then connects the touch screen controller directly to the CPU port 1. When not using the touch screen option, jumpers J6 and J8 can be in any position.

3. Set switches S1 and S2 on the touch screen controller board. See Figure 3-23 for settings.
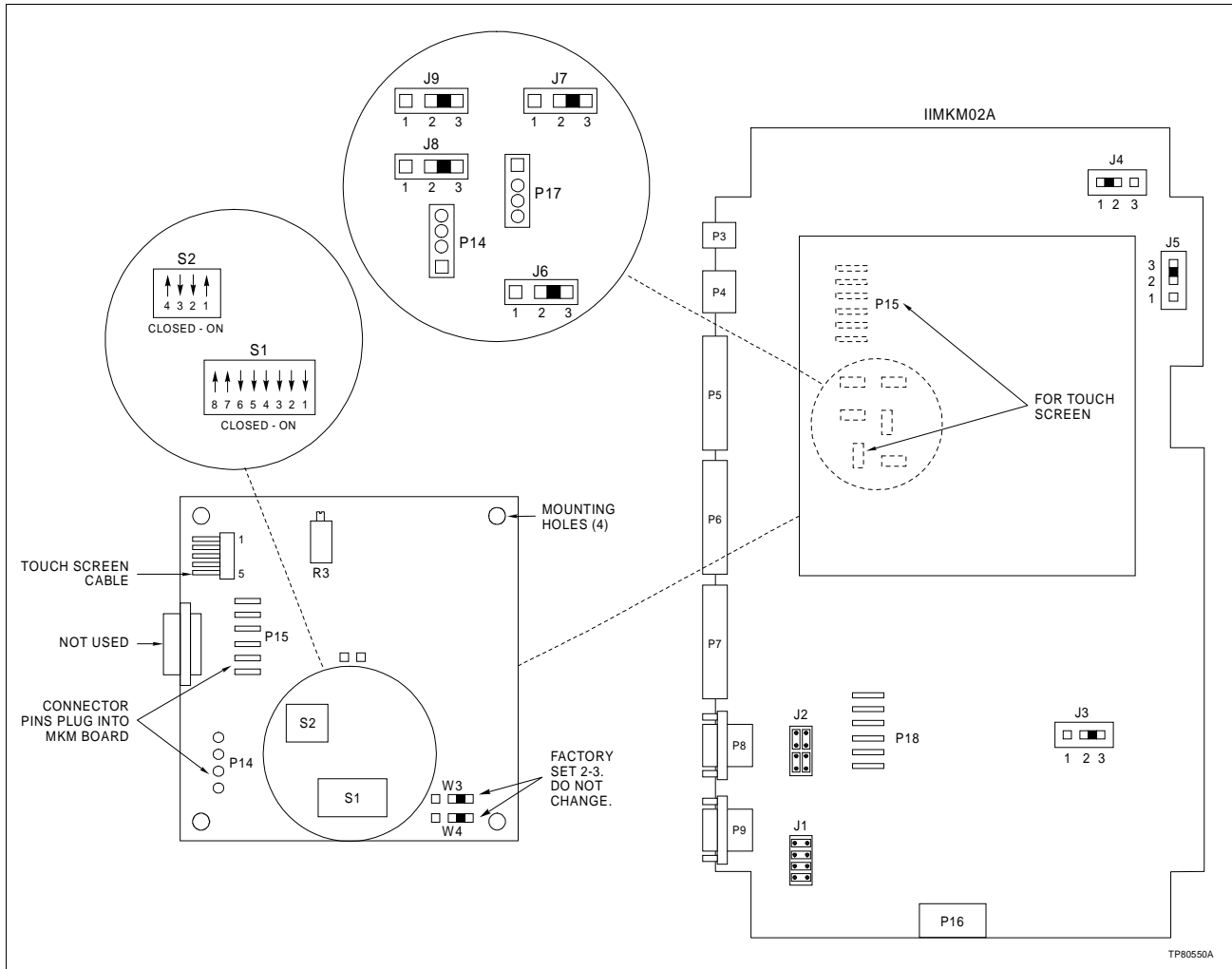
Figure 3-23. Touch Screen Switch and Jumper Settings

4. Jumpers W3 and W4 on the touch screen controller board are factory set at pin 2 to 3 and should not be disturbed.

PERIPHERALS

The peripheral devices in this instruction are limited to the printers that can be used with the IIOIC42 operator interface console. Either an Okidata or Genicom printer connects to port 1 on the OIC CPU using cable part number 6642555A1. Refer to the appropriate IIOIS41 or IIOIS42 instruction manual for details on printer configuration, operation and cabling requirements.

> **NOTE:** Port 1 of the CPU will accept either the touch screen option or a printer, not both.

Refer to the manufacturer's documentation for more information on peripheral devices.

SOFTWARE INSTALLATION AND START-UP

Once the auxiliary consoles are installed and wired and ready for operation, refer to the appropriate OIS manual (listed in *REFERENCE DOCUMENTS* in Section 1) for protocol, configurations, software installation, start-up procedures and system operation.

CAUTION	**Make sure that all voltage labels and voltage switch settings on the peripheral devices, power supply and power entry panel show the correct operating voltage. Equipment damage may result if the incorrect voltage is connected. Make sure the console main power circuit breaker is off before changing operating voltage setting or equipment damage may result.** **Remove power from all peripheral equipment and the console before installing or removing peripheral equipment. Equipment damage may result.**
ATTENTION	**Assurez-vous que toutes les indications de tension et tous les réglages de tension sur les périphériques, le bloc d´alimentation et le panneau d´entrée des alimentations correspondent bien à la tension de service. Une tension incorrecte risque d´endommager l´equipment. Assures-vous que le disjoncteur d´alimentation principal de la console est étient avant de modifier les réglages de tension de service afin d´éviter d´endommager l´équipment.** **Coupez l´alimentation des périphériques et de la console avant d´installer ou de retirer des périphériques, sinon l´équipment risque de subir des dommages.**

SOFTWARE INSTALLATION AND START-UP

SECTION 4 - TROUBLESHOOTING

INTRODUCTION

This section explains how to troubleshoot the OIC operator interface. It contains a troubleshooting table and techniques for gathering information on software faults.

Replace components by following the procedures in Section 6. Refer to information in Section 3 when replacing parts. Review specific adjustments associated with replaceable parts before returning the system to normal operation. Close and secure cabinet doors on applicable models after troubleshooting or replacing parts and before returning the system to normal operation.

Be sure to follow all warnings, cautions and notes. Put circuit boards containing MOS devices into antistatic bags when stored or shipped back to the factory. Do not repair printed circuit boards in the field. All repairs and adjustments should be performed by qualified personnel.

TROUBLESHOOTING

The OIC consoles are shipped ready for operation. After completing the instructions given in Section 3, prepare the unit for service. The troubleshooting guide in Table 4-1 helps identify problems and suggest solutions.

Table 4-1. Troubleshooting Guide

Symptom	Possible Problem or Solution
No power indicator on circuit	No AC power at console. Check AC wiring on input. Check AC on power entry panel or keyboard interface assembly. Check breaker light on power entry panel or keyboard interface.
Breaker off but indicator on	Check breaker contacts. Check breaker wiring. Check AC input wiring.
Improper/ incomplete start-up	Refer to the CPU customer hardware information instruction shipped with the console.
Start-up OK but no keyboard response	Check keyboard assignment. Check all cables. Check caps lock position. Check IIMKM02A module seating and jumpers. Check main OIS configuration (keyboards/printers).
Start-up OK but no CRT picture	Check monitor AC power. Check RGB cables. Check monitor switch (sync on green). Check resistor switches for 75 ohm termination. Check brightness and contrast controls.

INTRODUCTION

DIAGNOSTIC POWER UP TESTS

If the troubleshooting guide fails to identify a problem in the OIC console, follow the AC and DC power test procedures. Check the AC voltages at the line input to the power entry panel on all models except the tabletop. On the tabletop model, the AC voltage is on the keyboard interface assembly.

AC Power Test

NOTE: When the instructions state to apply power to the OIC console, switch the main breaker to the ON position. To turn off the power, switch the main circuit breaker to the OFF position.

1. Turn off power to the console. Disconnect AC power to all equipment inside the console by unplugging the line cords from the back of the power entry panel (keyboard interface assembly for the IIOIC421 tabletop).

2. Apply power to the console by switching on the line circuit breaker.

3. Use a digital voltmeter to measure the AC power at each of the outlets as follows:

IIOIC421 tabletop: keyboard interface assembly has one outlet marked AC OUT.

IIOIC422 console: power entry panel has five outlets marked UPPER CRT, LOWER CRT, POWER SUPPLY, BLOWER AUX. The fifth outlet is on the front of the unit and is marked PERIPHERAL POWER.

IIOIC423 environmental: power entry panel has four outlets marked CRT, TERMINAL, LIGHT, A/C.

IIOIC424 panel mount: power entry panel has one outlet marked CPU POWER.

4. The line voltage should be 90 to 132 VAC RMS for a 120-VAC input and 180 to 264 VAC for a 240-VAC input. Refer to the **Site Planning and Preparation** instruction for specific AC voltages.

5. Use the digital voltmeter to check each outlet and insure that neutral, live and ground are wired correctly, and there are no ground faults. Refer to Section 3 and Section 6.

6. Turn off the power to the console. Verify that it removes power from all outlets.

DC Power Test

Follow these steps to test the DC power supply. The necessary test equipment consists of a digital voltmeter. Figures 6-5, 6-6, 6-7 and 6-8 show the main power supply.

1. Turn off power to the console.

    NOTE: Do not disconnect the power wiring from the multibus card cage (IIOIC422 models).

2. Unplug DC power distribution cables from all peripheral devices (ADP panel and keyboard interface board, if present). Disconnect the power cables at the distribution side of the cables.

3. Make certain the power line cord for the power supply is plugged into the power entry panel (keyboard interface assembly for the IIOIC421 tabletop).

4. Insure that ***all*** power supply wiring is correct. Refer to Section 3 and Section 6.

5. Apply power to the console.

6. Measure the DC voltages at the multibus card module backplane for the IIOCI422 models and at connector P16 of the IIMKM02A module for all other OIC models.

7. Take the voltage measurements with the power supply under load. Measure the +5.00 VDC; the voltage should be +0.25 VDC and -0.0 VDC of the value. Measure the +12.00 VDC and -12.00 VDC; the voltage should be +1.5 VDC and -1.00 VDC of the value.

    NOTE: Unstable operation may result if the power supply voltages are not in tolerance.

8. Turn off the power to the console.

9. Connect all DC power distribution cables removed in Step 2.

10. Apply power to the console and check the DC voltage levels again. Adjust the power supply to obtain the voltage within a tolerance of +0.05 V.

SECTION 5 - MAINTENANCE

INTRODUCTION

This section contains a preventive maintenance schedule for the OIC console. Be sure to follow all warnings, cautions and notes. Put boards containing semiconductors into antistatic bags when stored or shipped back to the factory. Do not repair printed circuit boards in the field. All repairs and adjustments should be performed by qualified personnel.

The reliability of any stand alone product or control system is affected by the maintenance of the equipment. Elsag Bailey recommends that all equipment users practice a preventive maintenance program that will keep the equipment operating at an optimum level.

This section presents procedures that the customer should be able to perform on site. These preventive maintenance procedures should be used as a guideline to assist in establishing good preventive maintenance practices. Select the minimum steps required to meet the cleaning needs of your system.

Personnel performing preventive maintenance should meet the following qualifications:

- Maintenance personnel should be qualified electrical technicians or engineers that know the proper use of test equipment.

- Maintenance personnel should be familiar with both the OIC and the main OIS console, have experience working with process control systems, and know what precautions to take when working on live AC.

PREVENTIVE MAINTENANCE SCHEDULE

Table 5-1 is the preventive maintenance schedule and check list for the OIC console. The table lists the preventive maintenance tasks in groups according to their specified maintenance interval. Some tasks in Table 5-1 are self explanatory. Instruction for tasks that require further explanation are covered under *STANDARD PREVENTIVE MAINTENANCE PROCEDURES* or in the manufacturer's documentation supplied with the console.

INTRODUCTION

Table 5-1. Preventive Maintenance Schedule and Check List

Task	Frequency
Check printer, clean and lubricate.[1]	1 month
Be sure fans are turning. With power off, wipe dust off all fan blades.	
Check cabinet and module for dust. Clean as necessary using an antistatic vacuum.	3 months
Adjust printer per manufacturer's instructions.	
Check power supply output. Adjust power supply if needed (**DC Power Test** in Section 5).	
Check alarm and display LEDs.	
Check the cabinet air filters. Clean or replace them as necessary. Check the air filter more frequently in excessively dirty environments.	6 months
Check all signal, power and ground connections within the cabinet and verify that they are secure. Refer to procedure.	
Check power supply outputs. Refer to procedure.	
Check the quality of the plant power and grounding system. Follow the power and grounding system verification procedures in the INFI 90 OPEN site preparation and planning instruction.	12 months
Inspect and check the power entry panel. In high vibration environments testing may be necessary at shorter intervals. Refer to procedure.	2 years
Replace power supply. Call Elsag Bailey sales and service for information.	5 years
Complete all appropriate tasks in this table.	Shutdown

NOTE:
1. Adjust the printer using the procedures in the manufacturer's documentation.

EQUIPMENT AND TOOLS REQUIRED

Following are tools and equipment required for maintenance procedures.

- Antistatic vacuum.

- Bladed torque screwdriver (0 to 2.7 Newton meters - 0 to 24 inch-pounds).

- 4-inch bladed screwdriver.

- 16-inch bladed screwdriver.

- Isopropyl alcohol (99.5 percent electronic grade).

- Foam tipped swabs.

- Eberhard Faber (400A) pink pearl eraser or equivalent.

- Fiberglass burnishing brush.

- Distilled water.

- Lint free cloth.

- Mild, all purpose commercial spray cleaner.

STANDARD PREVENTIVE MAINTENANCE PROCEDURES

These preventive maintenance procedures cover standard procedures for the console preventive maintenance requirements. Read through them before beginning the procedure.

WARNING	**Never clean electrical parts or components with the power on. Doing so exposes you to a fatal electrical shock hazard.**
	Wear eye protection whenever working with cleaning solvents. When removing solvents from printed circuit boards using compressed air, injury to the eyes could result from splashing solvent as it is blown off the printed circuit board.
	Il ne faut jamais nettoyer des piècesou des composants électriques lorsqu'ils sont sous tension. Ceci présente un risque d'électrocution fatale.
AVERTISSEMENT	**Portez toujours des lunettes de protection lorsque vous utilisez des solvants de nettoyage. L'aircomprimé servant à enlever le solvant des cartes de circuits imprimés provoque des éclaboussures qui risquent d'atteindre les yeux.**

Checking Connections

Check all signal wiring, power and ground connections within the cabinet to verify their integrity. When checking connections, always turn a screw, nut or other fastening device in the direction to tighten only. If the connection is loose, it will be tightened. If the connection is tight, the tightening action will verify that it is secure. There must not be any motion to loosen the connection.

> **NOTE:** Power to the cabinet must be off while performing this preventive maintenance task.

1. Check and verify that all phase, neutral and grounding conductor connections on the power entry panel are secure.

2. Check and verify that all other power connections within the cabinet, including connections to the power supplies are secure.

3. Check and verify that all field wiring connections to the communication modules are secure.

Cleaning the Monitor

To clean the monitor window, remove dirt, finger prints or grease with a commercial glass cleaner and a soft lint-free cloth.

Cleaning the Operator Keyboard

To clean the operator keyboard:

1. Wipe away dust with a soft lint free cloth.

2. Clean dirt and film from the keyboard using a mild all purpose commercial spray cleaner and lint-free cloth.

Cleaning the Engineering Keyboard

To clean the engineering keyboard:

1. Use a static safe vacuum cleaner to remove dust from the keyboard.

2. Clean the key caps and keyboard enclosure with an all purpose commercial spray cleaner and lint free cloth. Do not spray into the keyboard. Apply cleaner to the cloth only.

Cleaning the Printed Circuit Boards

There are several circuit board cleaning procedures in this section. These procedures cover circuit board cleaning and cleaning edge connectors. Use the procedures that meet the needs of each circuit board. Remove all dust, dirt, oil, corrosion or any other contaminant from the circuit board.

Do all cleaning and handling of the printed circuit boards at static safe work stations. Always observe the proper electrostatic sensitive device handling precautions when handling printed circuit boards.

GENERAL CLEANING AND WASHING

If the printed circuit board needs minor cleaning:

Remove dust and residue from the printed circuit board surface using clean, dry, filtered compressed air or an antistatic field service vacuum cleaner.

Another method of washing the printed circuit board is:

1. Clean the printed circuit board by spraying or wiping the board with isopropyl alcohol (99.5% electronic grade). Use a foam tipped swab to wipe the circuit board.

2. When the circuit board is clean, remove excess solvent by using compressed air to blow it free of the circuit board.

CLEANING EDGE CONNECTOR

To clean edge connector contacts:

1. Use a solvent mixture of 80% isopropyl alcohol (99.5% electronic grade) and 20% percent distilled water.

2. Soak a lint-free cloth with the solvent mixture.

3. Work the cloth back and forth parallel to the edge connector contacts.

4. Repeat with a clean cloth that is soaked with the solvent mixture.

5. Dry the edge connector contact area by wiping with a clean lint-free cloth.

To clean tarnished or deeply stained edge connector contacts:

1. Use an Eberhard Faber (400A) pink pearl eraser, or equivalent to remove tarnish or stains. Fiberglass or nylon burnishing brushes may be used also.

2. Minimize electrostatic discharge by using the 80% to 20% isopropyl alcohol to water solution during burnishing.

3. Do not use excessive force while burnishing. Use only enough force to shine the contact surface. Inspect the edge connector after cleaning to assure no loss of contact surface.

CLEANING FEMALE EDGE CONNECTORS

To clean the contacts on a female edge connector:

1. Use a foam tipped swab or a lint-free cloth wrapped over a piece of scrap circuit board. Soak the swab or cloth in electronic grade isopropyl alcohol.

2. Insert the swab of cloth covered circuit board into edge connector and work it back and forth to clean the contacts.

3. Rinse the edge connector contacts by spraying with isopropyl alcohol.

4. Remove excess alcohol and dry using compressed air.

Checking Power Supply Outputs

To check modular power supply outputs on the power entry panel, refer to the AC and DC power tests in Section 4.

Checking and Inspecting Power Entry Panel

The system must be shut down to perform this maintenance task.

1. Check the tightness of all power wiring screws within the console. Torque all screws connected to AC power to 1.58 Newton meters (14 in-lbs).

2. Inspect and clean the power entry panel and DC distribution board connections.

SECTION 6 - COMPONENT DESCRIPTION AND REPLACEMENT

INTRODUCTION

This section provides a description of components and explains how to replace the components in the OIC console. It contains jumper and dipswitch settings and also component locations and settings. There are no special tools required.

Components in the OIC consoles are configured at the factory. This information is given in case settings are changed or hardware needs to be replaced.

Table 6-1 lists the hardware used in the OIC operator interfaces that are covered in this section.

IIMKM02A MULTIBUS KEYBOARD MODULE

The multibus keyboard module interfaces the keyboard and other operator input devices to the OIC console. The location of the module varies depending on which type of OIC is being used. There are six jumpers on the MKM board to set for proper operation (Figure 6-1).

Table 6-1. Hardware

Nomenclature or Part Number	OIC Model Description				Hardware Description
	421	422	423	424	
1948623A9	x	x	x	x	19-inch color monitor
6638353A7		x			Power entry panel
6638514A1	x	x	x	x	Keyboard assembly (mylar)
6638553A5		x			Power supply assembly
6638554A2		x	x	x	keyboard interface assembly
6639030A5	x				keyboard interface assembly
6639503A5			x[1]		Power entry panel
6640038A1	x		x	x	Power supply
6640300A1		x			Four slot multibus card cage
6640851A2				x[1]	Power entry panel
IIADP01	x	x		x	Annunciator/display panel (tabletop - optional)
IIADP02		x		x	Annunciator/display panel
IIAKB04	x	x	x[2]	x	QWERTY engineering keyboard
IIAMS04	x	x		x	Mouse
IIATB05	x	x		x	Trackball
IIMKM02A	x	x	x	x	Multibus keyboard module
NADS03			x		Annunciator display panel

NOTES:
1. Includes keyboard interface assembly.
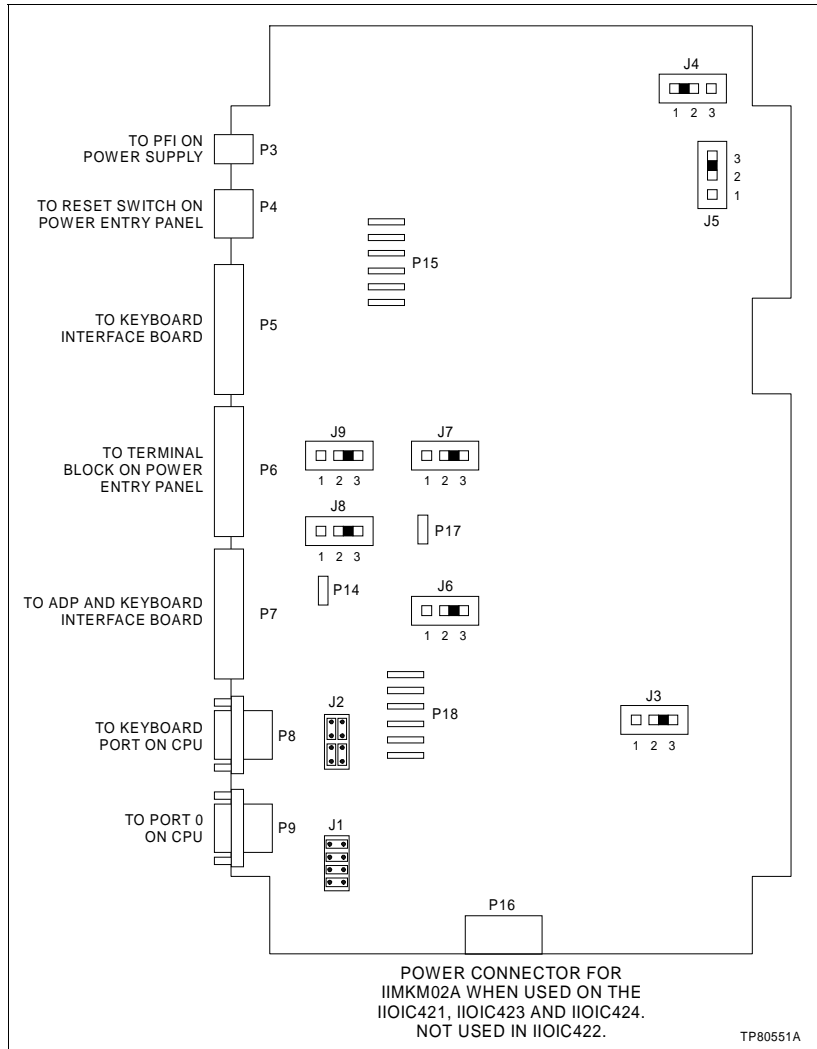2. IIOIC423 requires an IIAKB04 without the adapter.

Bailey®

Figure 6-1. IIMKM02A Multibus Keyboard Module

Jumpers J1 and J2 control serial ports one (P8) and two (P9). Connecting the eight pins horizontally configures the serial port for data to be transmitted from the MKM module on pin three of the connector and received from the connected device on pin two of the connector. Connecting the eight pins vertically as shown for P9 in Figure 6-1 configures the serial port for data to be transmitted from the MKM module on pin two of the connector and received from the connected device on pin three of the connector.

Jumper J3 resets the OIC multibus card cage when the MKM watchdog timer circuit times out. Set the jumper to J3 pins one and two for OIC reset on time-out. Set the jumper to J3 pins two and three for no OIC reset on time-out. Factory default is no reset on time-out.

Jumper J4 allows the option of disabling the power supply out-of-tolerance (OOT) signal to reset the MKM module. Set the

jumper to J4 pins one and two to disable the OOT signal. Set the jumper to J4 pins two and three to enable the OOT signal. Factory default is to disable OOT on all OIC consoles

> **NOTE:** The two digital outputs are open collector type which sink up to 250 milliamps. The two digital inputs are rated at up to 250 milliamps (future).

Jumper J5 must be set to pins two and three.

Jumpers J6 and J8 are for consoles with the touch screen option. Setting the jumpers to J6 and J8 pins two and three disconnects the MKM lead. A cable then connects the touch screen controller board directly to the CPU port 1.

Jumpers J7 and J9 are reserved for future use and are not used on the IIOIC42 console.

IIMKM02A MULTIBUS KEYBOARD MODULE REPLACEMENT

CAUTION	**Failure to turn off the main power circuit breaker before removing or inserting modules into the card cage may result in equipment failure.**
ATTENTION	**Si l'on omet d'eteindre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default.**

The IIMKM02A multibus keyboard module is the only module used in the IIOIC42 console. The multibus keyboard module connects the keyboard interface assembly to the CPU.

IIOIC422 Console In the IIOIC422 model, the MKM board is located in the multibus card cage. Remove the module from the multibus card cage by following these steps:

1. Open the door on the front of the cabinet and turn off the main power circuit breaker.

2. Remove the required cables.

3. Loosen (do not remove) the two screws in the left and right card retaining brackets.

4. Slide the left and right card retaining brackets out of the way to permit the module removal tabs on the card to pass.

5. To unseat a module, lift the module removal tabs.

6.   Carefully slide the module out of the multibus card cage.

7. Check the jumper settings on the new module before assembling into the card cage.

All other models   For the tabletop, environmental and panel mounted consoles, the location of the MKM board varies.

1. Remove power to the console.

2. The MKM module has four retaining screws. Remove the attaching hardware and disconnect any cables.

3. Check the jumper settings on the new module before assembling.

MULTIBUS CARD CAGE

The multibus card cage provides power and mounting for the IIOIC422 console multibus keyboard module. Figure 1-2 shows the component locations for the IIOIC4221 (lower monitor) consoles.

Figure 6-2 shows the front view of the card cage. Figure 6-3 shows the rear view of the multibus card cage.

To remove a multibus card cage:

1. Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed.

2. Follow the procedure in this section to remove the MKM multibus keyboard module to a static safe location.

3. Disconnect and label all cables from the card cage.

4. Support the back and front of the card cage and remove the four screws at the front of the card cage (two on each side).

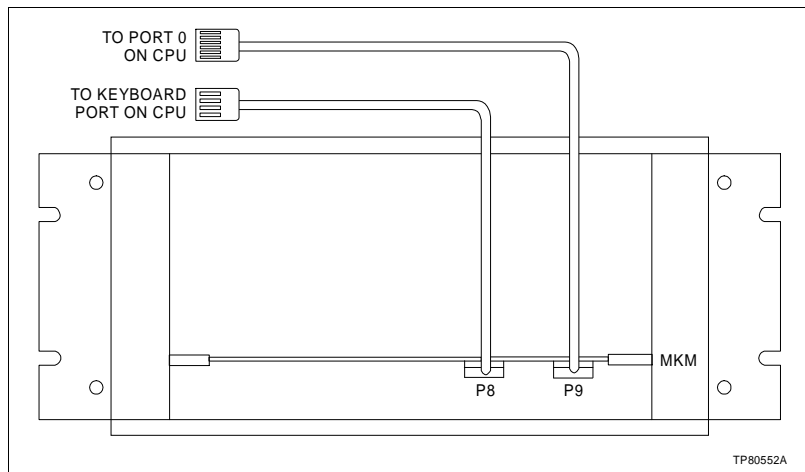5. Carefully slide the cage out the front of the cabinet.

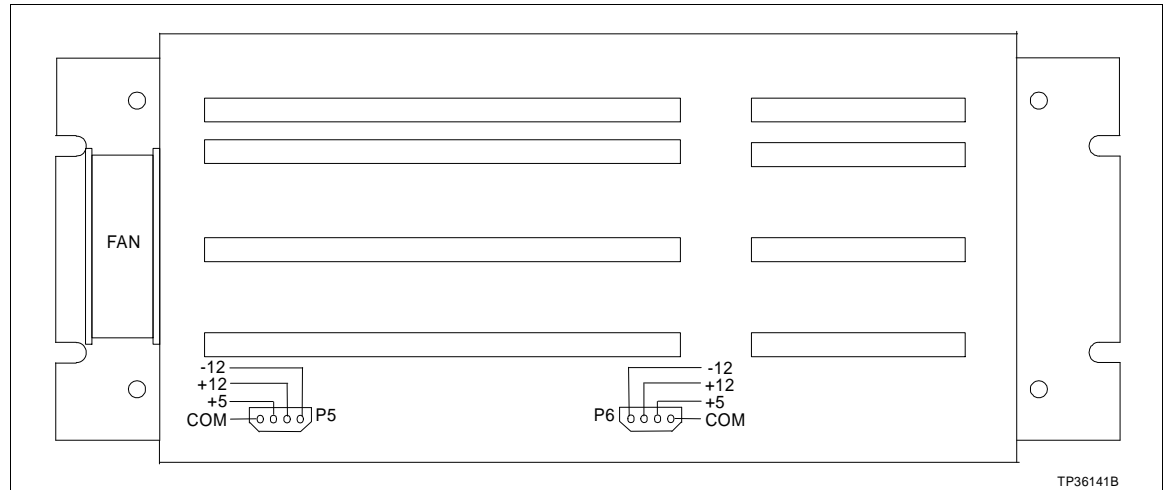*Figure 6-2. IIOIC422 Multibus Card Cage (Front View)*

Figure 6-3. IIOIC422 Multibus Card Cage (Rear View)

FAN ASSEMBLY FOR THE CARD CAGE

Figure 6-3 shows the fan in a console card cage. Refer to Table 7-1 for the part number for the 11.43 cm (4-1/2 in) fan. Use this procedure to remove the fan from a console.

1. Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed. Cut and remove cable ties securing the fan assembly power cord.

2. Remove the two long screws on either side of the fan assembly and slide the fan assembly out around the multibus card cage.

NOTES:
1. Be sure the arrow on the fan being installed points in the direction of the air flow.

2. Be sure the red striped conductor of the power cord is connected to the + (positive) terminal of the fan.

POWER SUPPLY REMOVAL

The 130-watt power supply provides power to the OIC console. The power supply location and part number varies according to the model of OIC. Refer to Table 6-1 for the power supply part numbers. Figures 1-1 through 1-4 in Section 1, show the location of the power supply for the various models.

IIOIC422 and IIOIC423 models have a DC distribution board attached to the power supply. Table 6-2 lists the DC distribution socket connections. Table 6-3 lists the pin outs to the DC distribution board sockets. Each socket on the DC distribution board is wired identically.

Table 6-2. DC Distribution Board Socket Connections

Socket	Console Connection
P1	IIMKM02A (IIOIC423 only)
P2	—
P3	Keyboard interface board
P4	IIADP02
P5	Backplane (IIOIC422 only)
P6	Backplane (IIOIC422 only)
P7	Fans (card cage and door) (IIOIC422 only)
P8	Fan (monitor)

Table 6-3. DC Distribution Board Pin Outs

Terminal	Socket	Description
1	1	+12V
2	2	Common
3	3	-12V
4	4	No connection
5-6	5	+5V
7-8	6	Common

Refer to Section 3 for cable part numbers and connection information. Figure 6-4 shows the connections from the power supply to the DC distribution board.

> **NOTE:** The power supply in the consoles operates on both 120 volts and 240 volts. The power supply is voltage autosensing and has no voltage select jumpers.
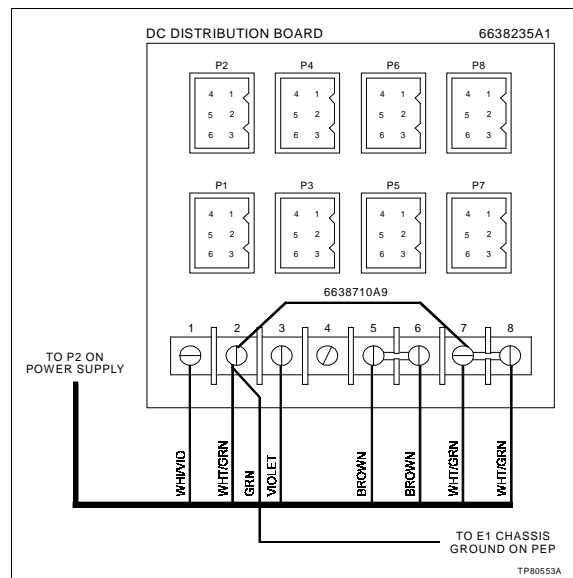

Figure 6-4. Connections to DC Distribution Board

IIOIC421 Tabletop

To remove the power supply from an IIOIC421 tabletop model, see Figure 6-5 and follow these steps:

1. Remove power.

2. To remove the cover from the top of the monitor, remove the eight screws and remove the split cover. Do not remove the monitor.

3. Mark and disconnect the wires on the power supply.

4. Carefully tip the monitor and chassis on one side or tip it to the left and support it.

5. Remove the four screws from the outside bottom of the chassis fastening the power supply to the chassis.

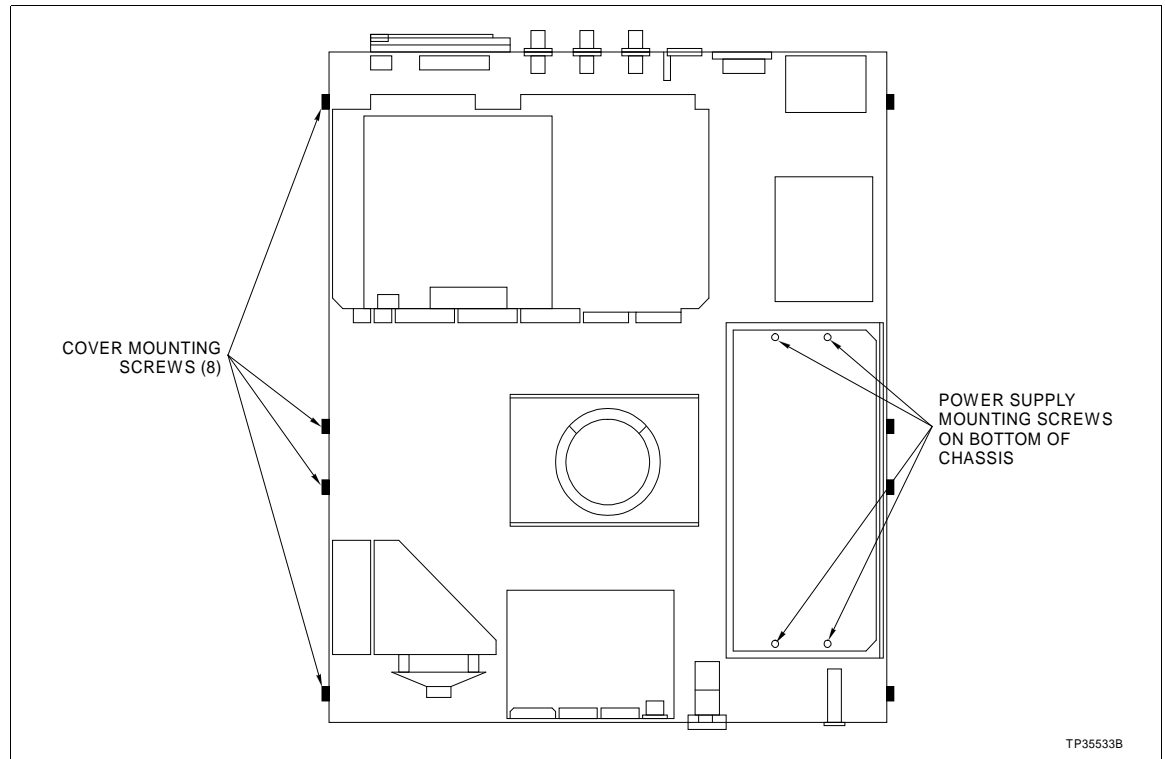6. Set the monitor and chassis back upright and replace the cover.

Figure 6-5. Power Supply Removal for
IIOIC421 Tabletop Console

IIOIC422 Console

To remove the power supply from an IIOIC422 console see Figure 6-6 and follow these steps:

1. Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed.

2. Remove the power supply plug from the socket on the power entry panel.

3. Mark and disconnect the wires between the power supply, DC distribution board and multibus card cage backplane.

4. Remove the two nuts holding the power supply bracket to the monitor mounting platform and slide the unit out the rear of the cabinet.
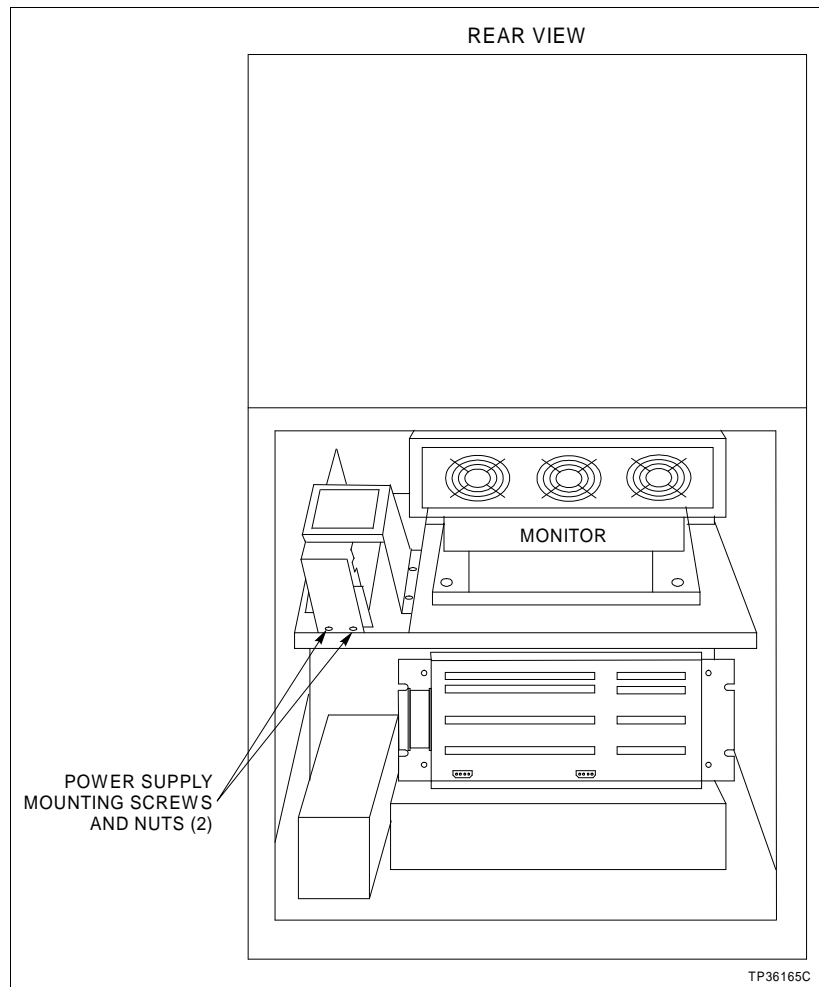

Figure 6-6. Power Supply Removal for IIOIC422 Consoles

IIOIC423 Environmental Cabinet

To remove the power supply from an IIOIC423 environmental cabinet see Figure 6-7 and follow these steps:

1. Follow the procedure for removing the IIOIC423 power entry panel in this section.

2. Remove the IIMKM02A circuit board. Do not lose the two nonconductive washers for each standoff.

3. To remove the cover from the top of the power entry panel, remove the nine screws shown in the figure and disconnect the DC distribution board connector.

4. Mark and disconnect the wires between the power supply and incoming AC.

5. Remove the four screws holding the power supply to the center support wall of the power entry panel.

NOTE: Check that the DC distribution board connector to the power supply is aligned correctly when replacing the cover.
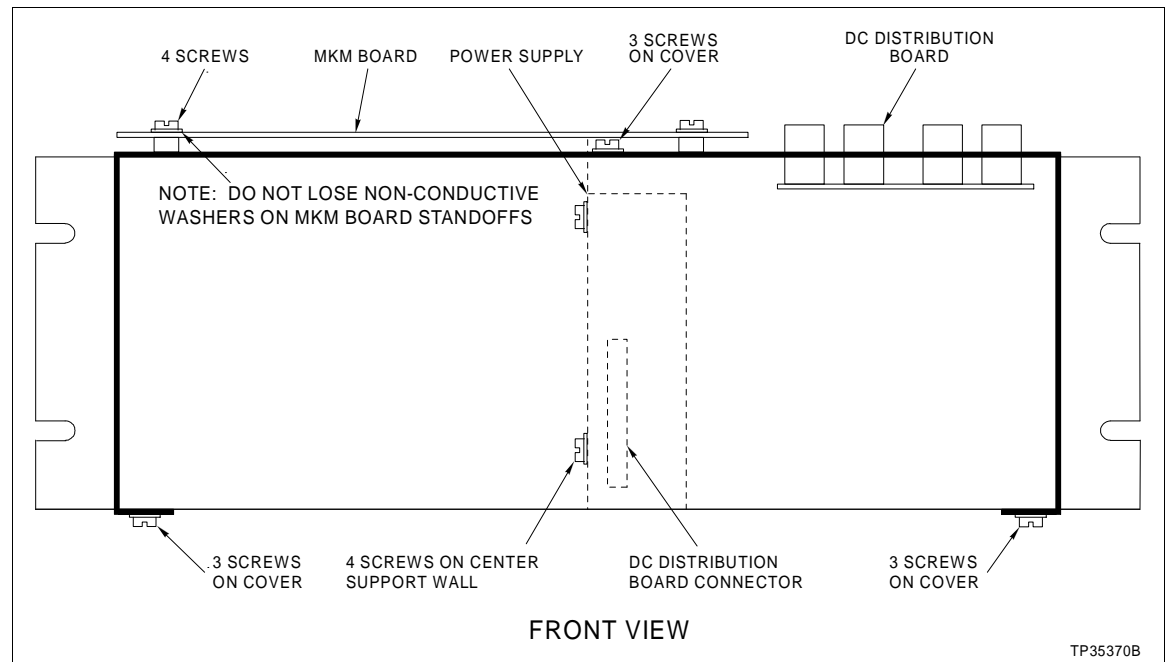

Figure 6-7. Power Supply Removal for IIOIC423 Environmental Console

IIOIC424 Panel Mount

To remove the power supply from an IIOIC424 panel mounted model see Figure 6-8 and follow these steps:

1. Remove power.

2. To remove the power entry panel, remove the two chassis screws on the upper edge of the back panel and carefully slide the unit out far enough to access the power supply mounting screws. It is not necessary to remove the monitor.

3. Mark and disconnect the wires on the power supply.

4. Remove the four screws from the outside bottom of the chassis fastening the power supply to the chassis.
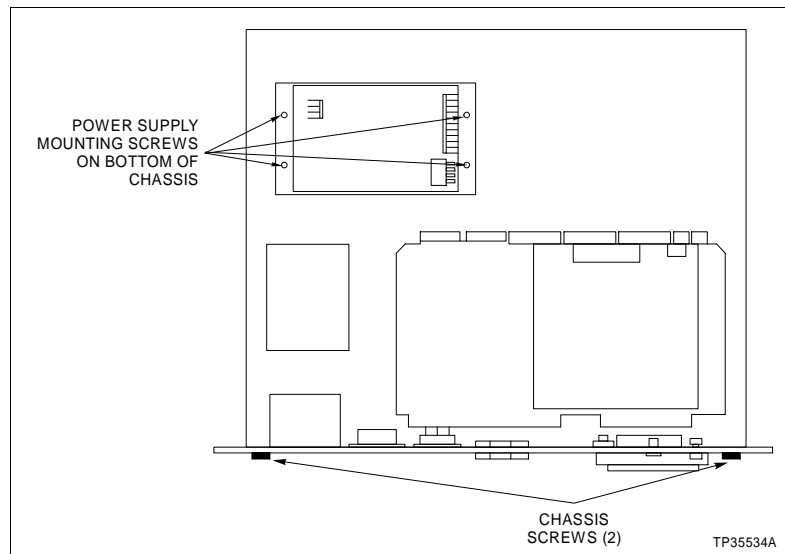

Figure 6-8. Power Supply Removal for IIOIC424 Panel Mount Console

POWER ENTRY PANEL

The power entry panel is used on all OIC models except the IIOIC421 tabletop. Location and part numbers of the power entry panels used on the OIC consoles vary depending on the model. The power entry panel contains the incoming AC power terminals and system circuit breakers along with ports for connecting peripheral devices and terminals for alarm contact outputs. The power entry panel also contains the system reset switch and the degaussing switches for the monitors. Refer to Table 6-1 for the power entry panel part numbers.

On the IIOIC422 console model, use the upper degauss switch to correct picture distortion due to magnetic fields on the screen of the upper (swivel mounted) monitor. Use the lower

COMPONENT DESCRIPTION AND REPLACEMENT

degauss switch to correct picture distortion due to magnetic fields on the screen of the lower monitor.

The system reset pushbutton resets the OIC multibus keyboard module (IIMKM02A) to an initial power up condition when pressed.

A terminal block connects annunciators to user-defined alarms. The terminal designation is printed on the panel beside the terminal. The digital in (DI) and digital out (DO) terminals are not used.

The power indicator is lit when the AC power is connected to the power entry panel and the main power circuit breaker is on.

Either 120 or 240-VAC power is used to supply power to the IIOIC42 operator interface console. The AC in is either hard wired (IIOIC422 model) or uses a 3-prong plug connector on the power entry panel.

NOTES:
1. Use the AC outlet for the intended purpose only.

2. Refer to Section 3 for wiring and cable connections. Some of the connections are on the back of the power entry panel and are accessed through the door on the back of the OIC console.

IIOIC422 Console

To remove the power entry panel from an IIOIC422 console, see Figure 6-9 and follow these steps:

1. Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed.

2. Shut down AC line power to cabinet (plant breaker) so that the AC line may be disconnected safely.

3. Remove all cables from the front of the power entry panel.

4. Remove AC cables from the outlets on the power entry panel.

5. Remove the signal cable from the multibus keyboard module that goes to the rear of the power entry panel. Leave the cables on the power entry panel. The new power entry panel comes with cables.

6. Remove the five screws from around the front of the power entry panel. Slide the power entry panel out the front of the cabinet.
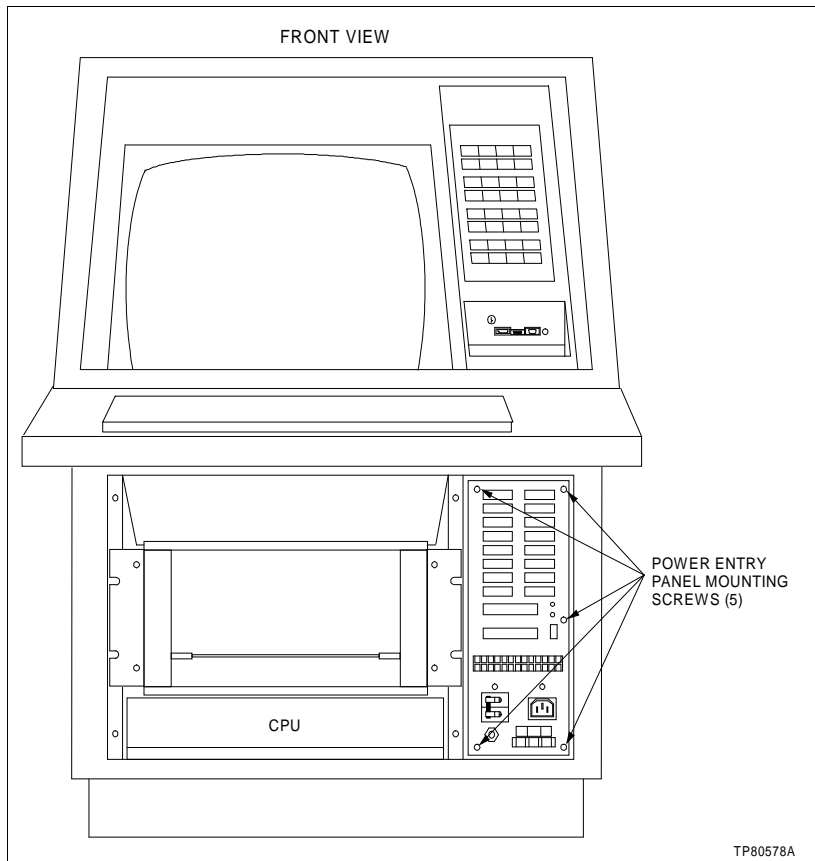
POWER ENTRY PANEL

I-E96-192-5A 6 - 11

FRONT VIEW

POWER ENTRY
PANEL MOUNTING
SCREWS (5)

CPU

TP80578A

*Figure 6-9. Power Entry Panel (PEP) Removal
for IIOIC422 Consoles*

IIOIC423 Environmental Cabinet

To remove the power entry panel from an IIOIC423 environ-
mental cabinet see Figure 6-10 and follow these steps:

1. Turn off the main circuit breaker on the power entry panel.
Check the power indicator to see if power is removed.

2. Shut down AC line power (plant breaker) so that the AC
line may be disconnected safely.

3. Remove all cables from the front and top of the power entry
panel and IIMKM02A cable. Refer to Section 3 for IIOIC423
cable connections..

4. Remove AC cables from the outlets on the power entry
panel.

5. Remove the two screws from the power entry panel end of
the bracket supporting the front of the power entry panel. If
the cabinet end of the bracket is removed, seal the mounting
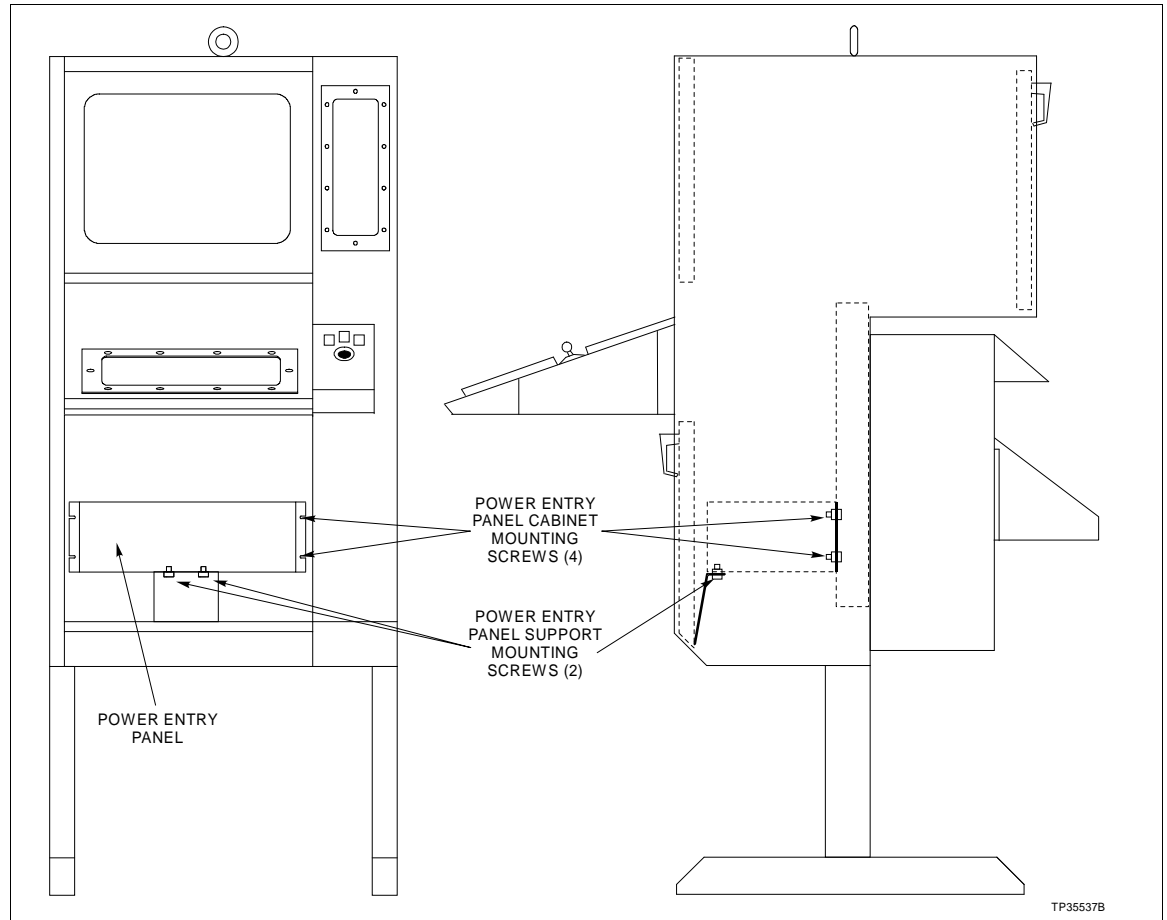
Figure 6-10. Power Entry Panel (PEP) Removal for IIOIC423 Environmental Cabinet

screws with Dow Corning 732® RTV clear sealant or equivalent when reassembling.

6. Remove the four screws from around the power entry panel.

7. Slide the power entry panel out the front of the cabinet. Use caution as the power entry panel weighs approximately 23 kg (50 lbs).

IIOIC424 Panel Mount

To remove the power entry panel from an IIOIC424 panel mount model see Figure 6-11 and follow these steps:

1. Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed.


® Registered trademark of Dow Corning Company.
™ Trademark of Dow Corning Company
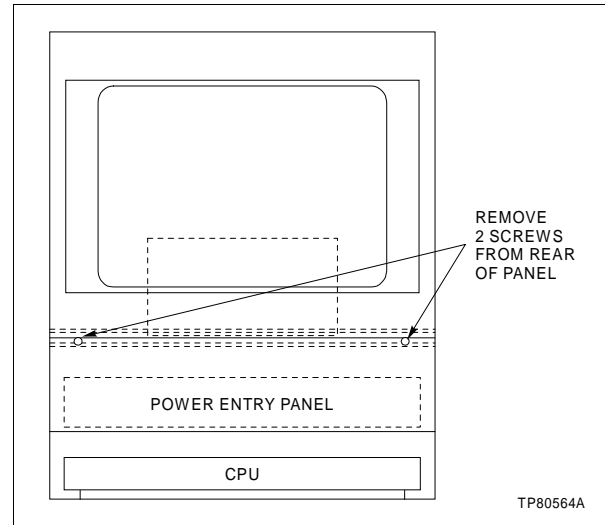
*Figure 6-11. Power Entry Panel Removal
for IIOIC424 Panel Mount*

2. Shut down AC line power to the panel (plant breaker) so that the AC line may be disconnected safely.

3. Label and disconnect all cables to the power entry panel.

4. From the back of the panel, there are two screws securing the power entry panel with its mounting tray. Remove the two screws and slide the power entry panel/mounting tray out the rear of the panel.

OPERATOR INTERFACE DEVICES

This section contains information and the removal instructions for the operator and engineering keyboards, mouse/trackball, the annunciator display panel, keyboard interface assembly and the color monitor. Follow all warnings and cautions.

Operator and Engineering Keyboards, Mouse, Trackball

The mylar operator keyboard plugs into the KEYBOARD port on the keyboard interface assembly. The engineering keyboard plugs into the AUX KBD port on the keyboard interface assembly. The IIAMS04 mouse or IIATB05 trackball plugs into the keyboard interface assembly at the MOUSE/TRACKBALL port. Unplug these devices to remove them.

> **NOTE:** The IIOIC423 environmental model does not use the mouse or trackball.

Annunciator Display Panel

There are three types of annunciator display panels available for the OIC consoles. They are the IIADP01, IIADP02 and NADS03. Ribbon cable maximum length is 4.5 meters (15 feet). Refer to *OPERATOR INTERFACE DEVICES* in Section 3 for installation information.

IIOIC421 TABLETOP MODEL

The tabletop model does not come with an ADP panel, but the IIADP01 tabletop assembly can be added to it. This 32-LED and pushbutton assembly is driven off the keyboard/interface board and the cable is connected to the AUX PORT. Unplug the cable to remove.

Refer to Section 3 for address switch settings.

IIOIC422 CONSOLE MODEL

The console model comes with the IIADP02 assembly mounted in the console (Figure 6-12). To remove the ADP:

1. Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed.

2. Disconnect all the cables.
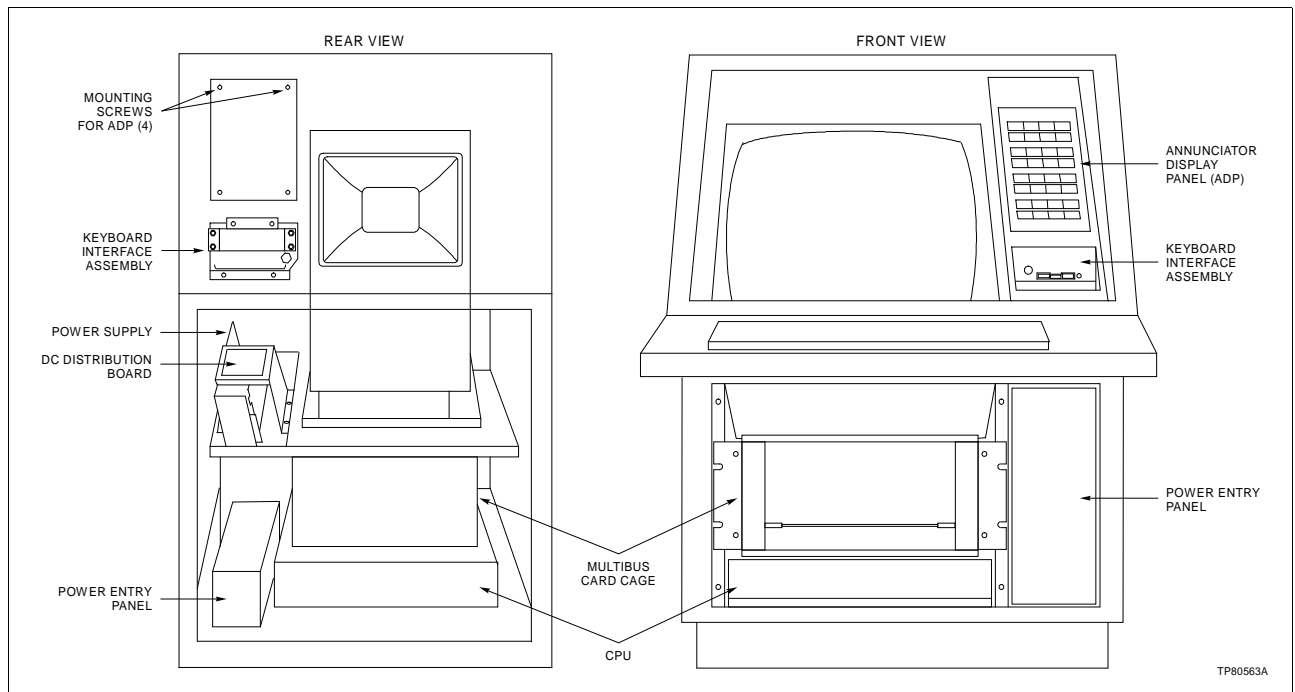
Figure 6-12. ADP02 Removal from IIOIC422 Console

3.   Remove the four screws securing the ADP panel to the console. Remove the ADP panel.

4.   Refer to Section 3 for address switch settings for new ADP panel.

> **NOTE:** The IIADP01 tabletop panel can be added to an IIOIC422 console in addition to the IIADP02.

IIOIC423 ENVIRONMENTAL MODEL

The environmental model comes with the NADS03 assembly mounted in the cabinet (Figure 6-13). To remove the NADS03 assembly:

1.   Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed. Open the rear doors and disconnect all the cables.

2.   Remove the screws securing the sealing ring to the cabinet.

3.   Once the sealing ring is removed, remove the four screws securing the NADS03 to the cabinet.

4.   Remove the NADS03 panel.

5.   Refer to Section 3 for address switch settings for new NADS03 panel.

6.   Install the new NADS03 panel into the cabinet.

7.   Install the sealing ring and ten screws to secure the ring to the cabinet. Tighten the screws.

IIOIC424 PANEL MOUNTED MODEL

The panel mounted model does not come with an ADP panel, but the IIADP01 tabletop display or the IIADP02 display can be added to the assembly as an option. Refer to Section 3 for installation information and cabling/connection information.

1.   Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed.

2.   If the optional IIADP01 tabletop unit is added, the cable connects to AUX PORT of the keyboard interface board. To remove, unplug the cable.

3.   If the optional IIADP02 is added to the assembly and mounted in a panel, remove any hardware that was required to mount the ADP in the panel.
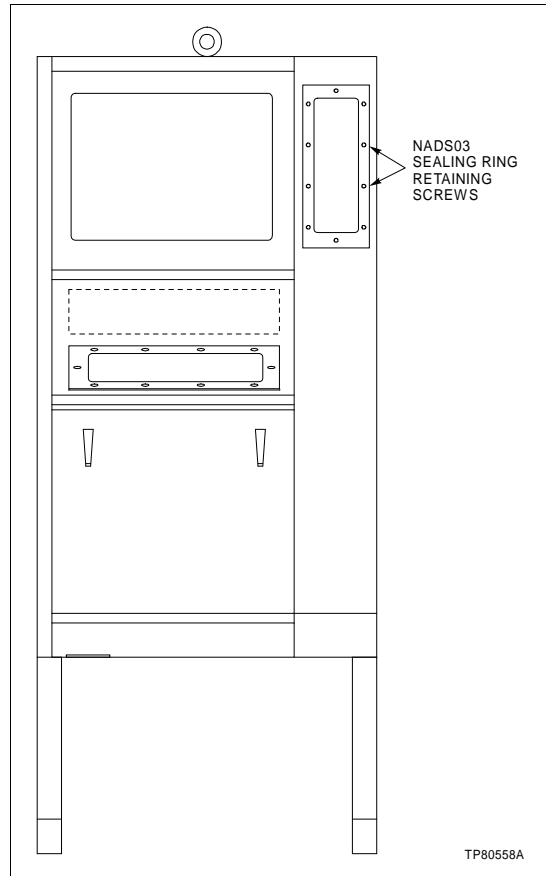
4.   Refer to Section 3 for switch settings for ADP panel.

NADS03
SEALING RING
RETAINING
SCREWS

TP80558A

Figure 6-13. NADS03 Removal from
IIOIC423 Environmental Cabinet

Keyboard Interface Assembly

CAUTION	**On the keyboard interface connector board, set positions 5, 6 and 7 of dipswitch SW1 to closed (on). Set positions 1 through 4 and 8 of dipswitch SW1 to open (off). Failure to configure dipswitch SW1 properly will damage the CPU in the console.**
ATTENTION	**Sur le circuit de raccordement de l'interface du clavier, règler les interrupteurs 5, 6 et 7 de SW1 à la position fermèe (ON). Règler les interrupteurs 1 à 4 et 8 de SW1 à la position ouverte (OFF). Si les interrupteurs de SW1 ne sont pas configurés adéquatement, le CPU de la console sera endommagé.**

The keyboard interface assembly part number and location varies according to OIC model. On the IIOIC421 tabletop console, the keyboard interface assembly is on the front of the case below the monitor. The keyboard interface assembly is located on the IIOIC422 console front panel next to the monitor behind a polycarbonate door. On the IIOIC423 environmental console, the keyboard interface assembly is on the front of the power entry panel behind the front door. On the

IIOIC424 panel mount consoles, the keyboard interface assembly is below the monitor and above the CPU. Refer to Table 6-1 for part numbers. Refer to Section 7 when replacing fuses for fuse part numbers.

The keyboard socket is for the operator keyboard supplied with the OIC consoles (Figure 6-14). The AUX 1 port is for a table-top annunciator display panel. The auxiliary keyboard connector is for an engineering keyboard. Connector P9 is not used.
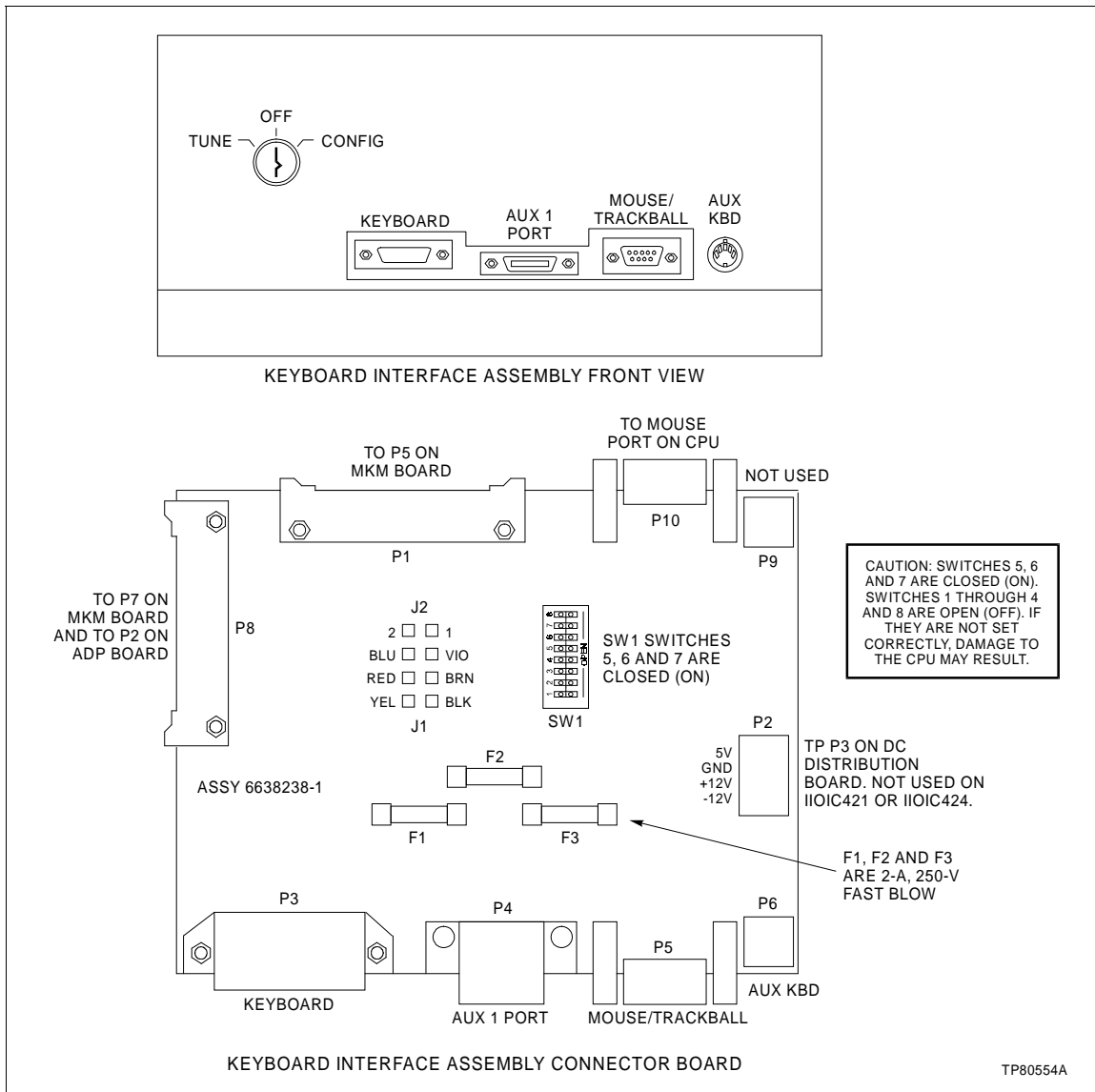
Figure 6-14. Keyboard Interface Assembly (IIOIC422 Model)

IIOIC421 TABLETOP MODEL

To remove the keyboard interface assembly from the tabletop model:

1. Turn off the power to the tabletop model. Verify power is removed.

2. Label and disconnect cables from the back of the monitor.

3. There is a slotted hole on the side of the monitor support tube. Remove the screw in the slotted hole.

4. Carefully lift off the monitor to gain access to the keyboard interface assembly. The monitor weighs about 27 kg (60 lbs). Be sure it is well supported.

5. Label and disconnect the cables going to the keyboard interface assembly.

6. The keyboard interface assembly is not attached to the table.

7. See Figure 6-14 for SW1 settings on new keyboard interface assembly.

IIOIC422 CONSOLE MODEL

To remove the keyboard interface assembly from an IIOIC422 console, see Figure 6-15 and follow these steps:

1. Turn off the main circuit breaker on the power entry panel to shut off power to the console. Verify power is removed.

2. At the rear of the cabinet, remove the two screws on the bottom of the power supply and slide it out of the cabinet. Cut the cable ties as needed to set the supply on the floor out of the way.

3. Unplug the operator keyboard, mouse and units connected to the front of the keyboard interface assembly.

4. Label and remove all of the cables from the rear of the keyboard interface assembly.

5. Remove the two screws holding the bottom of the keyboard interface assembly to the rear side of the monitor bezel. There are no screws on top or on the sides of the panel.

6. Carefully remove the keyboard interface assembly from the cabinet.

7. Refer to Figure 6-14 for SW1 settings on the new keyboard interface assembly.
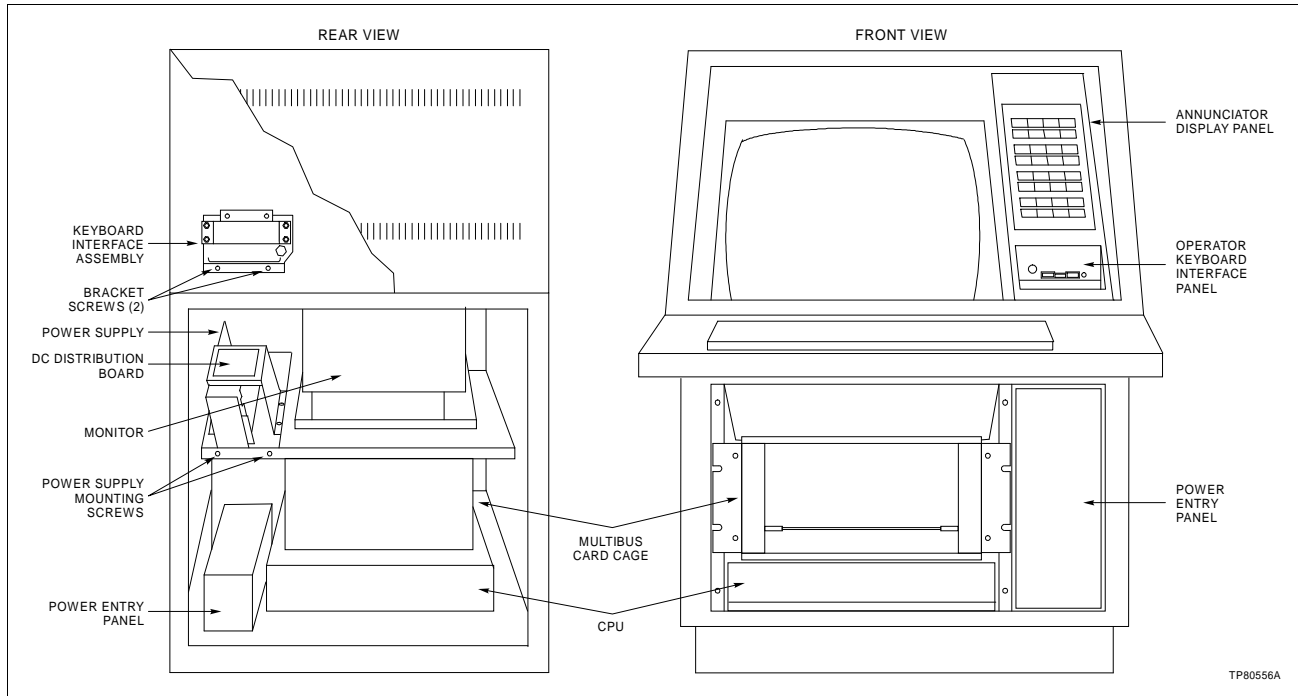
Figure 6-15. Keyboard Interface Assembly Removal for IIOIC422 Consoles

IIOIC423 ENVIRONMENTAL MODEL

To remove the keyboard interface assembly from an IIOIC423 environmental console, follow these general guidelines.

1. Open the front door and turn off the main circuit breaker on the power entry panel to shut off power to the console. Verify power is removed.

2. Label and disconnect all cables to or from the keyboard interface assembly.

3. Remove the four screws securing the keyboard interface assembly to the power entry panel.

4. Remove the keyboard interface assembly.

5. Refer to Figure 6-14 for SW1 settings for the new keyboard interface assembly.

IIOIC424 PANEL MOUNTED MODEL

To remove the keyboard interface assembly from the panel mounted model, follow these general procedures:

1. Turn off the power to the panel mounted model. Verify power is removed.

2. Label and disconnect all cables to and from the keyboard interface assembly.

3. Remove the two screws from the front of the power entry panel.

4. Slide the keyboard interface assembly out from the back of the panel.

5. Refer to Figure 6-14 for the SW1 switch settings for the new keyboard interface assembly.

Color Monitor

Resolution for the high resolution color monitor is 1280 x 1024 pixels. Adding additional color monitors is model dependent. The same monitor is used for all the OIC42 models. Refer to Table 6-1 for the monitor part number. Refer to the appropriate OIC model in Section 3 for the monitor cable connections.

> **NOTE:** The monitors are autosensing and do not need to be switched if the power to the cabinet is 120 V or 240 V. However, if other monitors are used, they may need to be switched to prevent damage from over voltage or under voltage.

A video cable connects the monitor to the monitor port on the CPU. Labels R, G and B represent red, green and blue on the monitor end of the cable.

A 9-pin D subconnector connects an external brightness, contrast and degauss control at AUX 1 of the monitor connection panel.

Screen brightness, contrast, width and height controls are mounted on the monitor back connection panel for all models. There are two degauss reset switches; one is located on the monitor connection panel and the other is located on the power entry panel.

Monitor wiring connector location may be slightly different for each OIC console. Figure 6-16 identifies the color monitor connections.

IIOIC421 TABLETOP MODEL

To remove the monitor from an IIOIC421 tabletop console, follow these guidelines.

1. Turn off the main circuit breaker on the keyboard interface assembly to shut off power to the OIC tabletop unit. Check the power indicator to see if power is removed from the system.
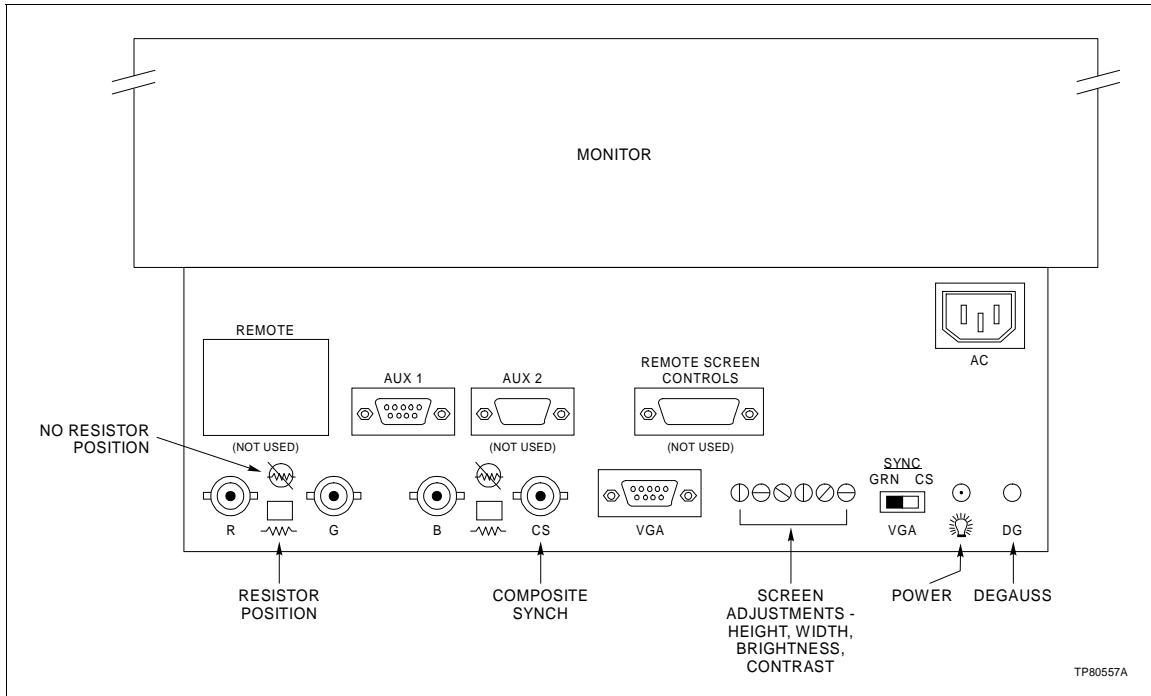
Figure 6-16. Color Monitor Connections

2.   In the rear of the cabinet, remove the power cord and RGB cable from the rear of the monitor. Secure the RGB cable out of the way.

3.   The monitor weighs about 27 kg (60 lbs). Be sure it is well supported.

WARNING	**The monitor will slide out the rear of the cabinet by itself when the mounting bolts are removed. The monitor weighs approximately 27 kilograms (60 pounds) and can cause bodily injury if it is allowed to slide out by itself. Support the monitor before removing the rear two bolts.**
AVERTISSEMENT	**Supportez le moniteur avant de retirer les deux boulons d'ancrange à l'arriér. Lorsque ces boulons d'ancrage sont retirés, l'e moniteur glissera et sorta à l'arriér de l'armoire. l'e moniteur pése environ 27 kilograms (60 pounds) et pourrait entrainer des blessures si on le laisse glisser de l'armoire.**

4.   Before installing a new monitor, make certain the resistor switches are set to *resistor* to insure that the termination is set for 75 ohms and that the VGA sync switch is set to *GRN* (Figure 6-16).

IIOIC422 CONSOLE MODEL

To remove the monitor from an IIOIC422 console:

1. In the front of the cabinet, turn off the main circuit breaker on the power entry panel to shut off power to the OIC console. Check the power indicator to see if power is removed from the system.

2. In the rear of the cabinet, remove the power cord and RGB cable from the rear of the monitor. Secure the RGB cable out of the way.

3. Remove the bolt on each side of the monitor mounting tray at the rear of the monitor. These bolts attach the tray to the cabinet shelf.

WARNING	**The monitor will slide out the rear of the cabinet by itself when the mounting bolts are removed. The monitor weighs approximately 27 kilograms (60 pounds) and can cause bodily injury if it is allowed to slide out by itself. Support the monitor before removing the rear two bolts.**
AVERTISSEMENT	**Supportez le moniteur avant de retirer les deux boulons d'ancrange à l'arriér. Lorsque ces boulons d'ancrage sont retirés, l'e moniteur glissera et sorta à l'arriér de l'armoire. l'e moniteur pése environ 27 kilograms (60 pounds) et pourrait entrainer des blessures si on le laisse glisser de l'armoire.**

4. Slide the monitor out of the cabinet.

5. After removal, place the monitor and tray onto a solid, flat surface.

6. Protect the screen of the monitor and set the screen down on the protective surface.

7. Remove the monitor from the mounting tray by removing the four screws under the tray.

8. Before installing a new monitor, make certain the resistor switches are set to *resistor* to insure that the termination is set for 75 ohms and that the VGA sync switch is set to *GRN* (Figure 6-16).

IIOIC423 ENVIRONMENTAL MODEL

To remove a monitor from an IIOIC423 environmental console:

1. Open the front door and turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed.

2. Label and disconnect all cables going to the back of the monitor.

3. Open the rear door above the air conditioner. Remove the two screws fastening the monitor mounting tray to the support rails.

4. Slide the monitor out of the cabinet. The monitor weighs about 27 kg (60 lbs). Be sure it is well supported.

5. Before installing a new monitor, make certain the resistor switches are set to *resistor* to insure that the termination is set for 75 ohms and that the VGA sync switch is set to *GRN* (Figure 6-16).

IIOIC424 PANEL MOUNTED MODEL

To remove a monitor from an IIOIC424 panel mounted console:

1. Make certain the power to the console is off.

2. Refer to Section 3 on panel mount installation for procedures to remove the bezel.

3. Label and disconnect all cables to or from the monitor.

4. Slide the monitor out of the panel. The monitor weighs about 27 kg (60 lbs). Be sure it is well supported.

5. Before installing a new monitor, make certain the resistor switches are set to *resistor* to insure that the termination is set for 75 ohms and that the VGA sync switch is set to *GRN* (Figure 6-16).

MONITOR ASSEMBLY

1. Plug the monitor cable into the monitor port on the back of the CPU.

2. Connect the red, green and blue cable plugs to the corresponding connectors on the back of the monitor. Use only supplied cables because of length limitations.

3. Plug the monitor power line into the proper socket on the back of the CPU.

Refer to Section 3 to locate the appropriate cable connection drawing.

CPU REMOVAL

This section contains information and the removal instructions for the CPU inside the OIC consoles. Read the instructions before beginning. Refer to the manufacturer's documentation for maintenance instructions.

IIOIC421 TABLETOP MODEL

To remove the CPU from an IOIC421 tabletop console see Figure 6-17 and follow these steps.

1. Turn off the power to the console. Check the power indicator to see if power is removed.

2. In the rear of the cabinet, open the access door.

3. Remove the AC power cable from the CPU.

4. Remove and label all communication cables from the rear of the CPU.

5. Remove the two screws that fasten the CPU mounting plate to the track on each side of the cabinet.

6. Slide the CPU and mounting plate completely out the rear of the cabinet.

7. Place the CPU and mounting plate on a clean work surface.

8. Remove the four screws from the bottom of the mounting plate. These screws fasten the CPU to the mounting plate.

IIOIC422 CONSOLE

To remove the CPU from an IIOIC422 console see Figure 6-18 and follow these steps:

1. Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed.

2. Remove and label all cables from the CPU.

3. Remove the two screws that hold the front of the mounting plate to the shelf.

4. Remove the two screws that hold the rear of the mounting plate to the support bracket.

5. Slide the CPU and mounting plate out the back of the cabinet.

6. Remove the four screws holding the CPU to the mounting bracket.
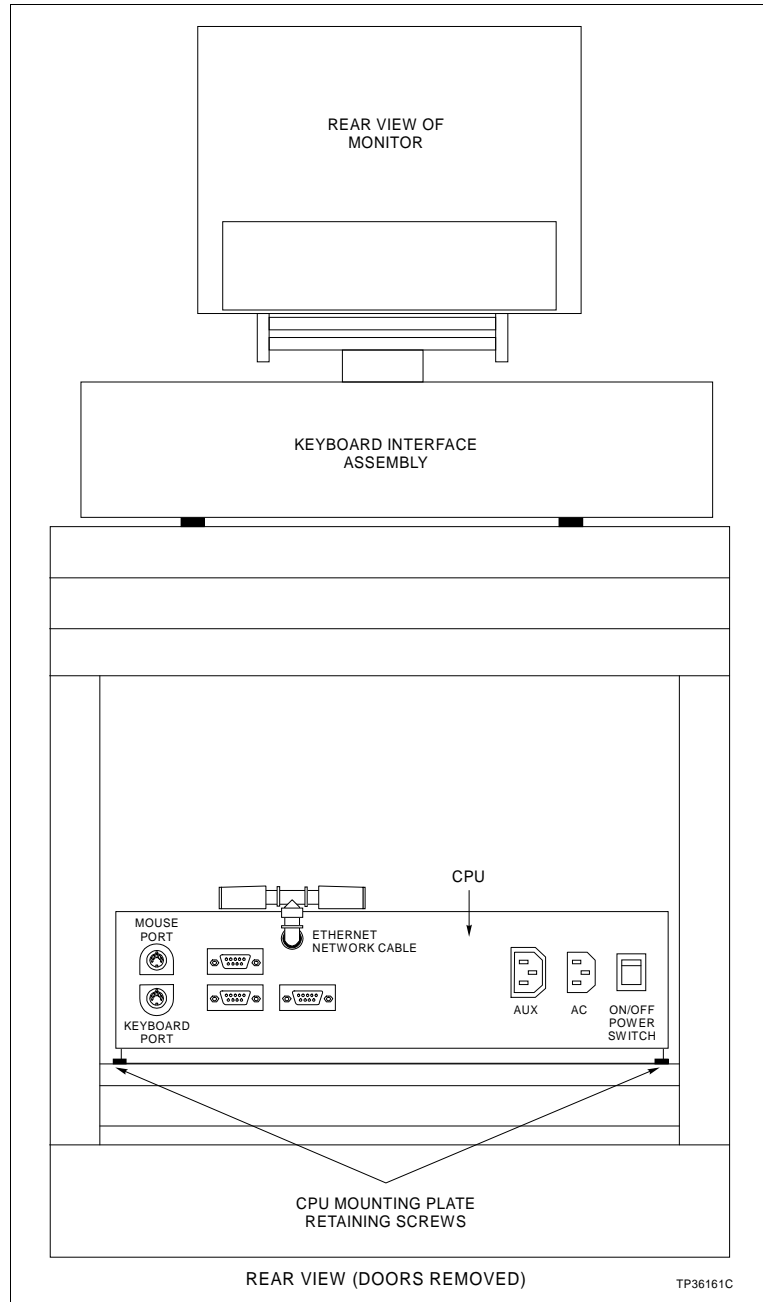
*Figure 6-17. CPU Removal for IIOIC421
Tabletop Console*
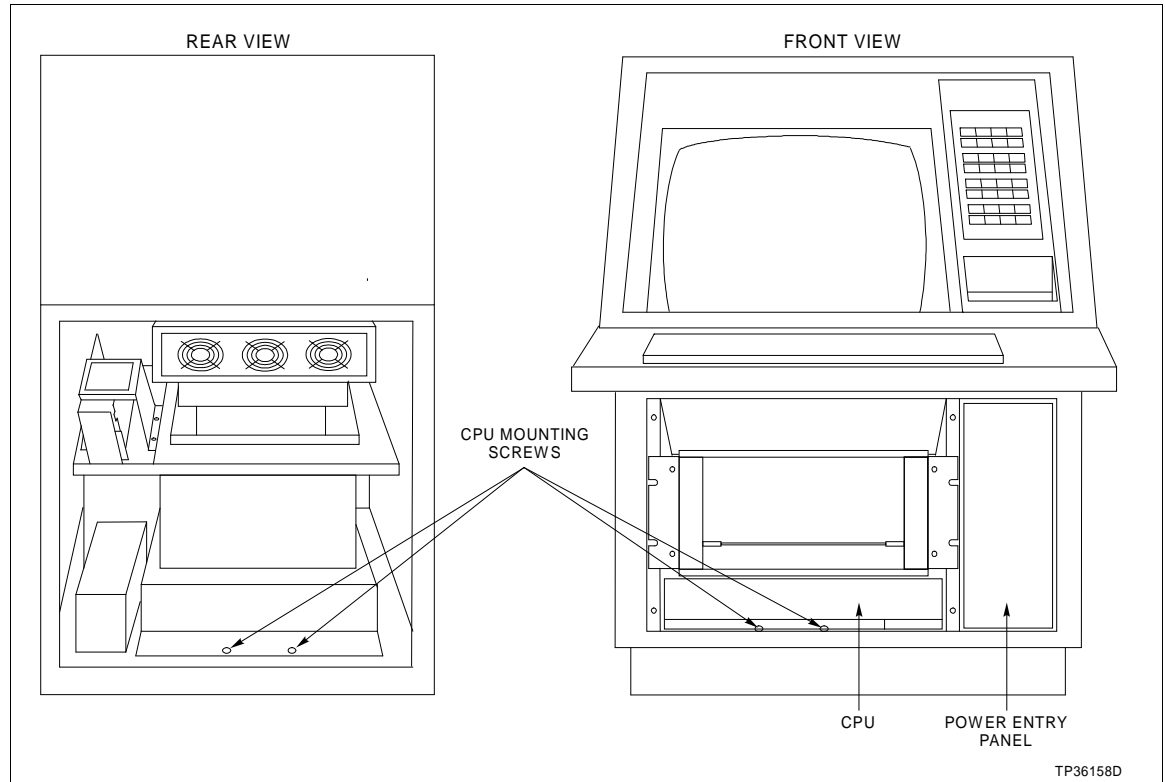
Figure 6-18. CPU Removal for IIOIC422 Consoles

IIOIC423 ENVIRONMENTAL CABINET

To remove the CPU from an IOIC423 environmental cabinet, see Figure 6-19 and follow these steps.

1. Open the front door and turn off the main circuit breaker on the power entry panel to shut off power. Check the power indicator to see if power is removed.

2. Remove the AC power cable from the CPU.

3. Remove and label all communication cables from the top of the CPU.

4. Remove the four retaining screws fastening the mounting plate to the shelf.

5. Slide the mounting plate and CPU out of the cabinet carefully.

6. Remove the four screws that hold the CPU to the mounting panel.
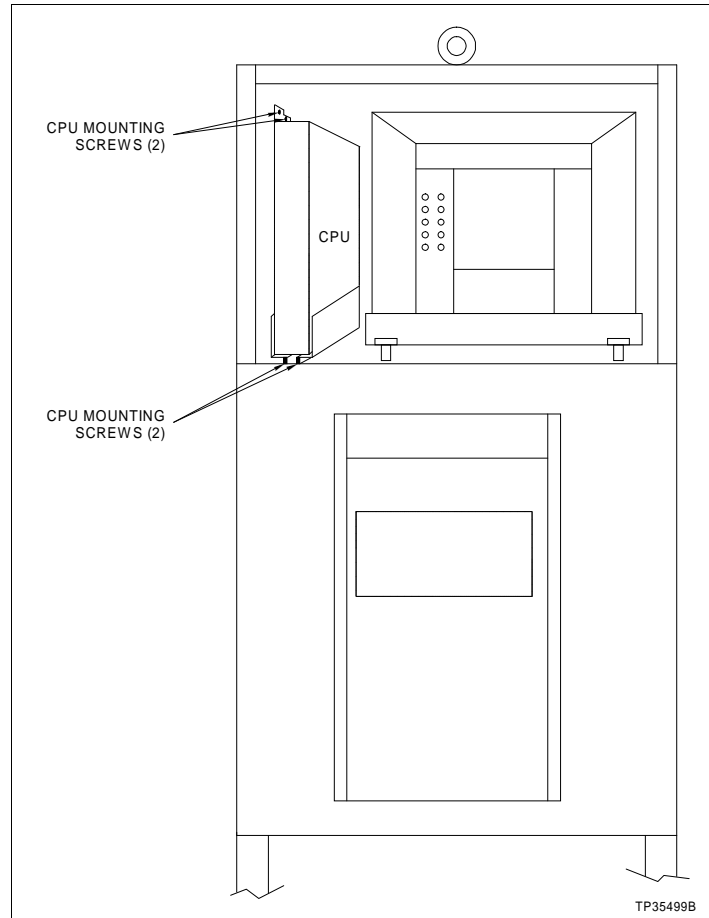
Figure 6-19. CPU Removal for IIOIC423
Environmental Console

IIOIC424 PANEL MOUNT

To remove the CPU from an IOIC424 panel mounted model, see Figure 6-20 and follow these steps.

1. Turn off the main circuit breaker on the power entry panel. Check the power indicator to see if power is removed.

2. Remove the AC power cable from the CPU.

3. Remove and label all communication cables from the rear of the CPU.

4. Remove the two screws that hold the CPU to the support bracket.

5. Slide the unit out along the support bracket.
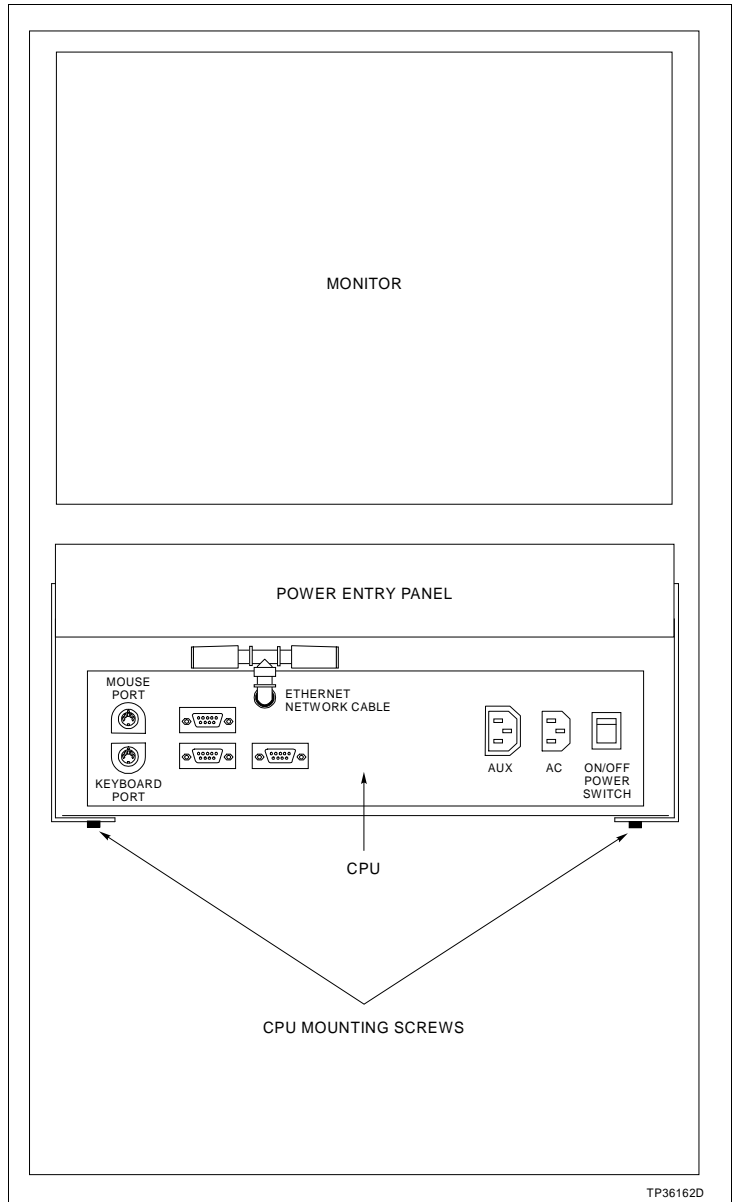
*Figure 6-20. CPU Removal for IIOIC424
Panel Mount Console*

CPU ASSEMBLY

When assembling a new CPU, refer to Figure 6-21 for connector callouts and to the appropriate figure in Section 3 for the cable connections for the model OIC being used.
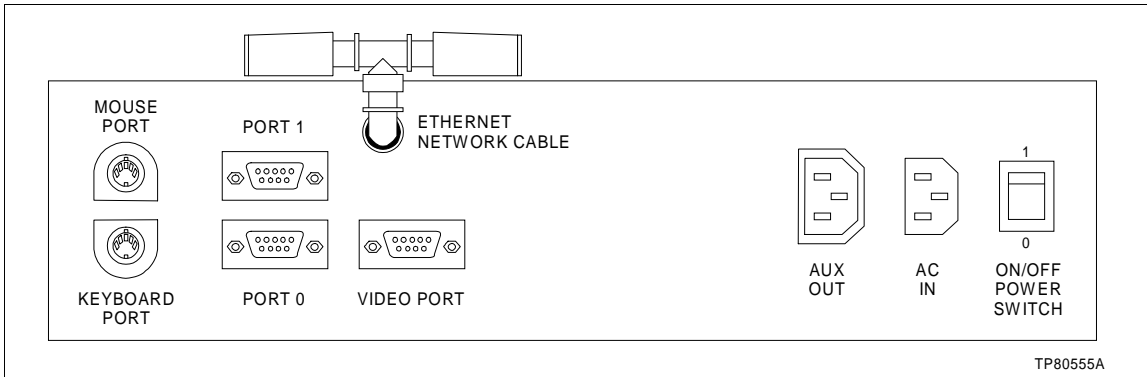
Figure 6-21. CPU Connector Identification

PERIPHERALS

The supported peripherals are portable and require no replacement instructions.

Either an Okidata or Genicom printer connects to port 1 on the OIC CPU using cable part number 6642555A1. Refer to the IIOIS42 instruction manual for details on printer configuration, operation and cabling requirements.

> **NOTE:** Port 1 of the CPU will accept either the touch screen option or a printer, not both.

Refer to the manufacturer's documentation for more information on peripheral devices and for repair information.

SECTION 7 - SUPPORT SERVICES

INTRODUCTION

Bailey Controls Company is always ready to assist in the operation and repair of its products. Send requests for sales or application services to your nearest sales or service office. Bailey Controls Company can also provide installation, repair and maintenance contract services.

REPLACEMENT PARTS AND ORDERING INSTRUCTIONS

Order replacement parts through a Bailey Controls Company sales or service office. Provide the following information when ordering parts:

1. Part description, part number and quantity.

2. Model and serial number (if applicable) and ratings of the assembly the part has been ordered for.

3. Publication number and reference used in identifying the part.

When ordering parts, use part numbers and part descriptions from equipment manuals. Parts with no commercial description must be ordered from your nearest sales or service office. Recommended spare parts lists, including prices, on standard assemblies are available through your nearest sales or service office.

TRAINING

Bailey Controls Company has a modern training facility available for training your personnel. On-site training is also available. Contact a Bailey Controls Company sales office for specific information and scheduling.

TECHNICAL DOCUMENTATION

Price and delivery of additional copies of this publication can be obtained through your nearest sales or service office.

SPARE PARTS

Spare parts Table 7-1 lists the recommended spare parts for the IIOIC42 operator interface. Bailey Controls Company suggests stocking one item each to minimize the duration and cost of downtime.

Bailey®

Table 7-1. Recommended Spare Parts

Description	Nomenclature or Part Number	OIC			
		421	422	423	424
50-ohm ThinWire terminator	1949009A1	x	x	x	x
Annunciator display panel	IIADP02		x		
Annunciator display panel	NADS03			x	
CPU - Tektronics, model XP400	6642485A1	x	x	x	x
Fan 11.43 cm (4-1/2 in)	1947419A7		x		
Fan assembly (3-inch)	6640639A1		x		
Fuse 2 A, 250V fast acting (keyboard interface board)	1948182A22001	x	x	x	x
Fuse 1 A (keyboard interface front panel - IIOIC421)	194776A11001	x	x	x	x
Joystick	1948803A2			x	
Keyboard enclosure	1948802A3			x	
Keyboard, operator (mylar)	6638514A1	x	x		x
Keyboard, operator (mylar)	6638514A2			x	
Keyboard, QWERTY (auxiliary engineering)	IIAKB04	x	x	x	x
Monitor (19-inch)	1948623A9	x	x	x	x
Monitor brightness cable (lower monitor) IIOIC4221	6638720A4		x	x	x
Monitor brightness cable (upper monitor) IIOIC4222	6638720A5		x		
Monitor brightness cable (all others)	6638720A6	x		x	x
Mouse	IIAMS04	x	x		x
Multibus keyboard module	IIMKM02A	x	x	x	x
Power entry panel	6638353M5		x		
Power entry panel	6639503A5			x	
Power entry panel	6640851A2				x
Power supply	6638553A5		x		
Power supply	6640038A1	x		x	x

APPENDIX A - QUICK REFERENCE INFORMATION

INTRODUCTION

This section provides a source for reference information. It contains the jumper and switch settings and fuse locations for the OIC42 operator interface console.
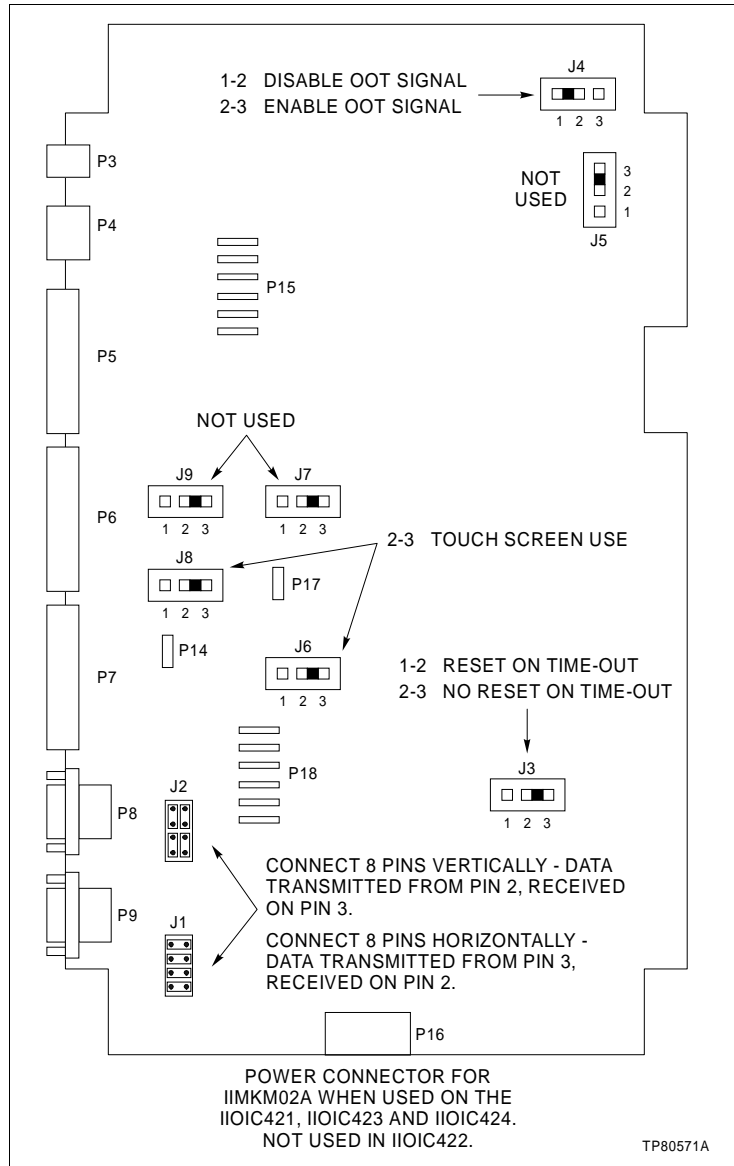
Figure A-1. IIMKM02A Multibus Keyboard Module
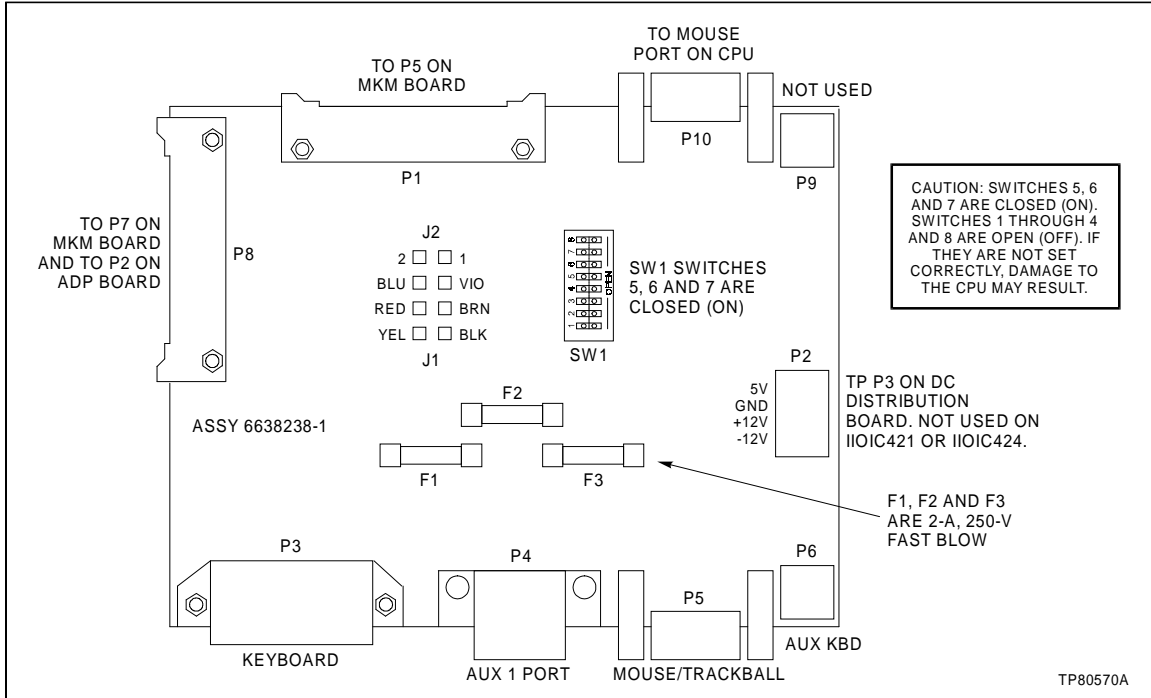
Figure A-2. Keyboard Interface Connector Board
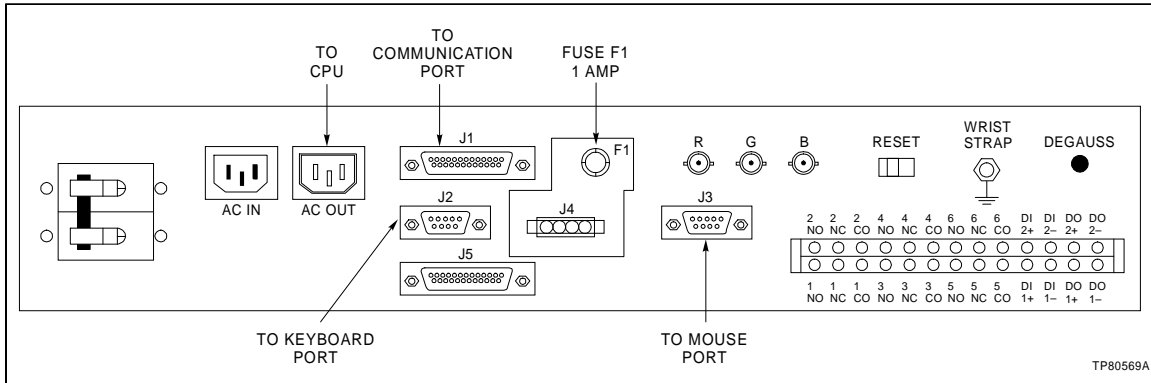
Figure A-3. IIOIC421 Keyboard Interface Assembly
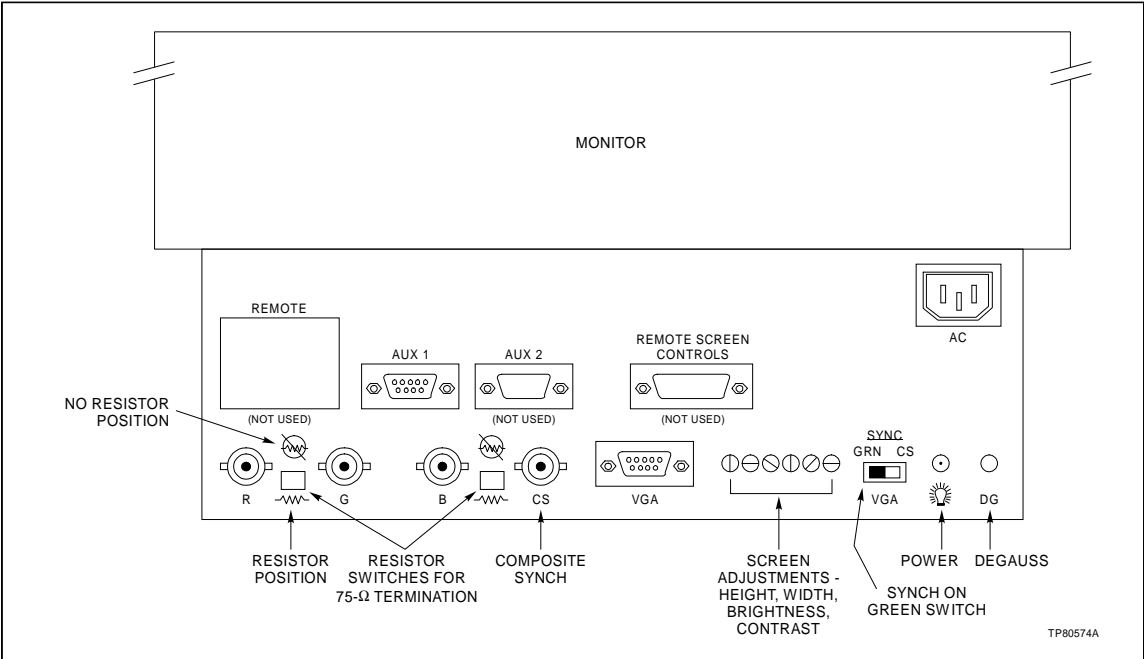
Figure A-4. Color Monitor
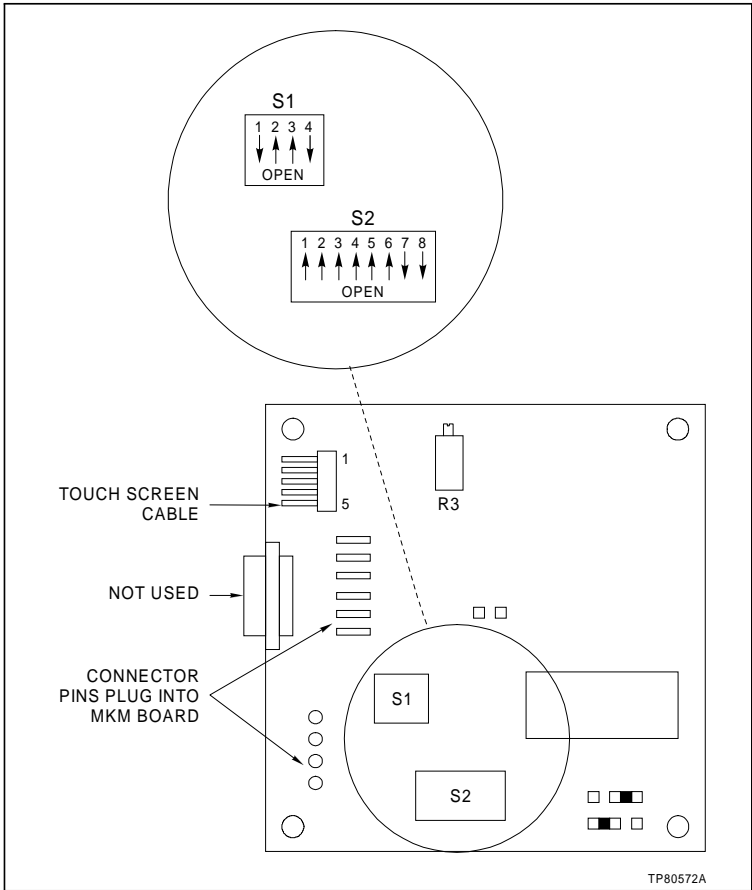
Figure A-5. Touch Screen Controller Board
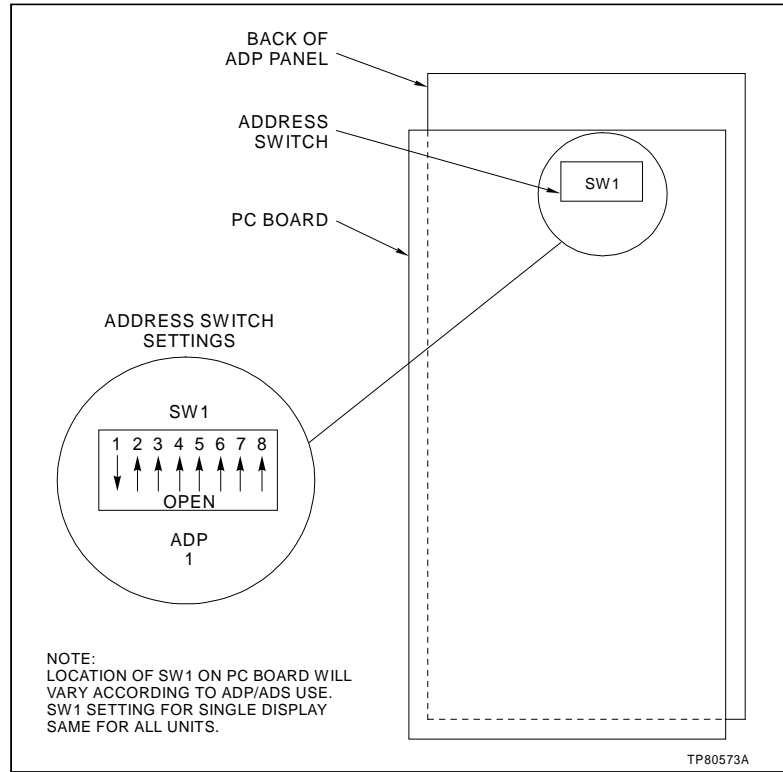
Figure A-6. IIADP01, IIADP02 and NADS03
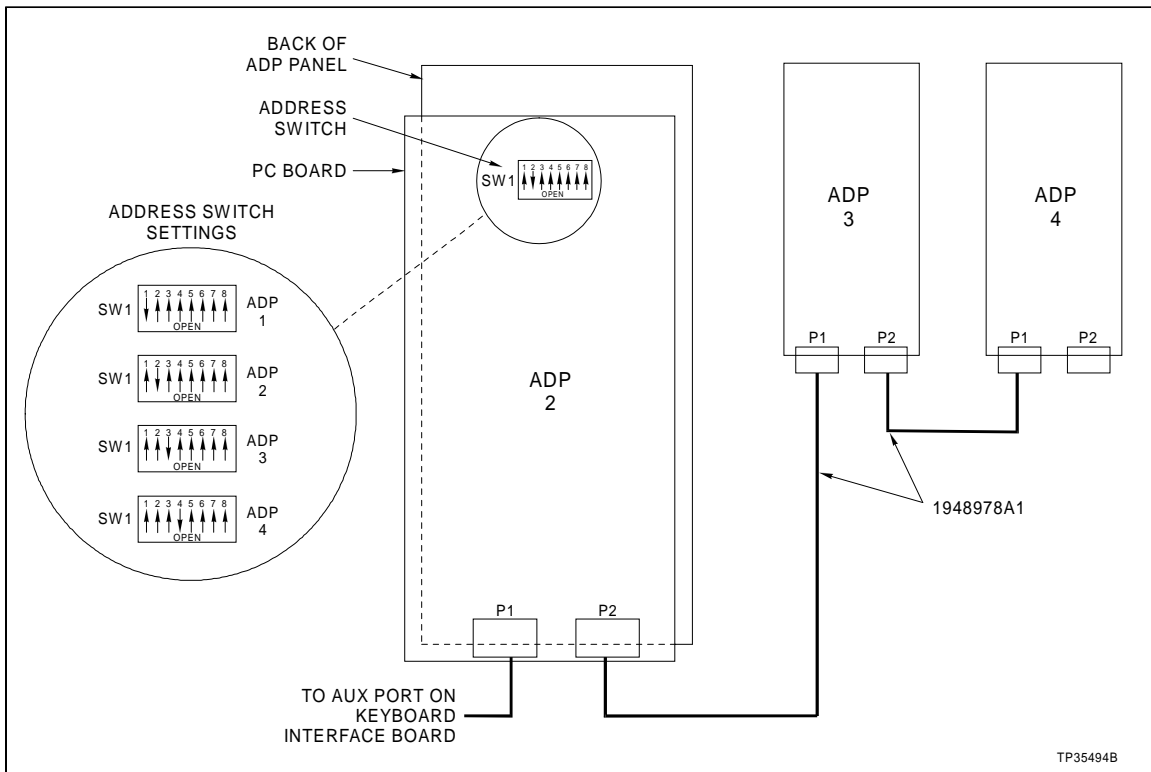
Figure A-7. IIADP01 Multiple Annunciator Displays

Index

Index (continued)

For prompt, personal attention to your instrumentation and control needs or a full listing of Bailey representatives in principal cities around the world, contact the Bailey location nearest you.

Australia
Elsag Bailey Pty. Limited
Regents Park, NSW
Phone: 61-2-645-3322
Telefax: 61-2-645-2212

Brazil
Bailey do Brasil
São Paulo
Phone: 55-11-548-4122
Telefax: 55-11-547-0315

Canada
Elsag Bailey (Canada), Inc.
Burlington, Ontario
Phone: 1-905-639-8840
Telefax: 1-905-639-8639

France
Elsag Bailey S.A.
Massy
Phone: 33-1-64-47-2000
Telefax: 33-1-64-47-2016

Germany
Bailey-F & P Automation GmbH
Overath
Phone: 49-220-473-90
Telefax: 49-220-473-979

Italy
Elsag Bailey
Genoa
Phone: 39-10-658-1
Telefax: 39-10-658-2941

Japan
Bailey Japan Company, Ltd.
Tagata-Gun, Shizuoka-Ken
Phone: 81-559-49-3311
Telefax: 81-559-49-1114

Jordan
Bailey Controls Jordan
Amman
Phone: 962-6-788-116
Telefax: 962-6-756-908

Mexico
Bailey Mexico S.A. de C.V.
Naucalpan
Phone: 52-5-557-6100
Telefax: 52-5-557-7022

Norway
Bailey Norge A.S.
Bergen
Phone: 47-55-222-000
Telefax: 47-55-222-010

People's Republic of China
Bailey Beijing Controls
Beijing
Phone: 86-10-401-0651
Telefax: 86-10-401-1643

Singapore
Elsag Bailey Pte. Ltd.
Singapore
Phone: 65-442-3200
Telefax: 65-442-2700

United Kingdom
Bailey Automation plc
Telford, Shropshire
Phone: 44-1952-670-477
Telefax: 44-1952-670-455

United States
Bailey Controls Company
Wickliffe, Ohio
Phone: 1-216-585-8500
Telefax: 1-216-585-8756

Venezuela
Bailey de Venezuela SA
Valencia
Phone: 58-41-329-196
Telefax: 58-41-327-632

Elsag Bailey
Process Automation

29801 Euclid Avenue • Wickliffe, Ohio 44092 • (216) 585-8500
Telex: 980621 • Telefax: (216) 585-8756 or (216) 943-4609