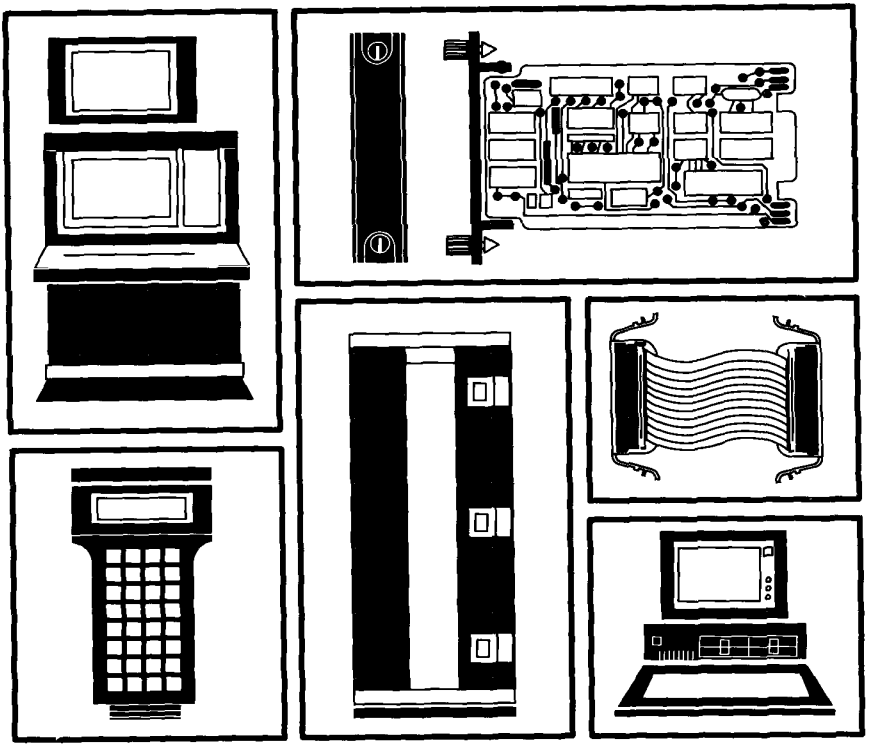
Bailey infi 90

E96-106

Instruction

Operator Interface Station (IIOIS40)

Hardware Manual



Bailey Process Control and Automation Solutions from Elsag Bailey Group

WARNING not ces as used n th s m anua app y to hazards or unsafe pract ces wh ch cou d resu t n personal njury or death

CAUTION not ces app y to hazards or unsafe pract ces wh ch could resu t n property damage

NOTES h ghl ght procedures and conta n nformat on wh ch ass st the operator n understand ng the nformation conta ned n th s manua

WARNING

INSTRUCTION MANUALS

DO NOT INSTALL MA NTA N OR OPERATE TH S EQU PMENT W THOUT READING UNDERSTAND NG AND FOLLOW NG THE PROPER **Ba ley Controls** NSTRUCTIONS AND MANUALS OTHERW SE N-JURY OR DAMAGE MAY RESULT

RADIO FREQUENCY INTERFERENCE

MOST ELECTRONIC EQUIPMENT IS INFLUENCED BY RADIO FREQUENCY INTERFERENCE (RF) CAUTION SHOULD BE EXERC SED WITH REGARD TO THE USE OF PORTABLE COMMUN CAT ONS EQU PMENT N THE AREA AROUND SUCH EQU PMENT PRUDENT PRACT CE D CTATES THAT S GNS SHOULD BE POSTED N THE V CIN TY OF THE EQUIPMENT CAUT ON NG AGAINST THE USE OF PORTABLE COMMUN CAT ONS EQU PMENT

POSSIBLE PROCESS UPSETS

MAINTENANCE MUST BE PERFORMED ONLY BY QUAL F ED PERSONNEL AND ONLY AFTER SECUR ING EQUIPMENT CONTROLLED BY TH S PRODUCT ADJUST NG OR REMOV NG TH S PRODUCT WH LE T S N THE SYSTEM MAY UPSET THE PROCESS BE NG CONTROLLED SOME PROCESS UPSETS MAY CAUSE NJURY OR DAMAGE

AVERTISSEMENT

MANUELS D'OPERATION

NE PAS METTRE EN PLACE REPARER OU FAIRE FONCT ONNER CE MATER EL SANS AVOIR LU, COMPRIS ET SUIVI LES NSTRUCT ONS REGLEMENTAIRES DE **Bailey Controls** TOUTE NEGLIGENCE A CET EGARD POURRA T ETRE UN E CAUSE D ACC DENT OU DE DEFA LLANCE DU MATER EL

PERTURBATIONS DE LA FREQUENCE RADIOPHONIQUE

LA PLUPART DES EQU PEMENTS E LECTRONIQUES SONT SENS BLES AUX PERTURBATIONS DE LA FREQUENCE RADIO DES PRECAUT ONS DEVRONT ETRE PRISES LORS DE L UT L SAT ON DE MATERIEL DE COMMUN CAT ON PORTAT F LA PRUDENCE EXIGE QUE LES PRECAUT ONS A PREN DRE DANS CE CAS SOIENT S GNALEES AUX ENDRO TS VOULUS DANS VOTRE US NE

PERTES ROCEDE RENVERSEMENTS

L ENTRET EN DO T ETRE ASSURE PAR UN PERSONNE QUAL F E ET EN CONS DERAT ON DE L ASPECT SECUR TA RE DES EQUIPMENTS CONTROLES PAR CE PRODU T L ADJUSTMENT ET/OU L'EXTRATION DE CE PRODU T LORSQU' L EST NSERE A UN SYSTEME ACT F PI UT OCCAS ONNER DES A COUPS AU PROCEDE CONTROLE SUR CERTA NS PROCEDES CES A COUPS PEUVENT EGALEMENT OCCAS ONNER DES DOMMAGES OU BLESSURES

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Preface

This manual provides basic information about the IIOIS40 operator console release E 1 It covers the VMS™ architec ture, general operating procedures, software installation, and how to transfer and save existing configurations. Read this manual before operating the console For additional worksta tion information, refer to the DEC™ documents that come with the product For operation and configuration informa tion, refer to the ***IIOIS40 Operator Interface Station Operation and Configuration Manual***

Please note that this manual assumes that IIMKM02 Mul tibus Keyboard modules are used

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List of Effective Pages

Total number of pages in this manual is 238, consisting of the following:

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6 1	Original
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C 1 through C 5	Original
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List of Tables

Safety Summary (continued)

SPECIFIC CAUTIONS (cont nued)	Fa lure to plug in the stream ng tape dr ve ribbon cab e before turn ng the tape dr ve power on may result in equ pment fa lure Read the notice on the front of the power entry pane before turning on the power to the tape dr ve Select the stream ng tape dr.ve w th the same voltage as the power entry panel out et or equ pment damage may result (p. 4-28, 4-32, 4-53) Make sure that a l labe s on the power supply and the power entry panel are changed to show 240 VAC operation or equ pment damage may resu t f the ncorrect vo tage is connected to the power supply (p 4 31) Support the VAXstat on before removing the ast mount ng screw or damage to the VAXstat on may resu t (p 7 14 7-16)

Sommaire de Securite

AVERTISEMENT D'ORDRE SPECIFIQUE	Ne fa tes pas fonct onner 'O S s les portes ou es couverc es sont ouverts ou ret res Tout contact avec es connexions ou c rcu e du courant ou de a tens on r sque de prcvoquer des b'essures (p 1 3, 3 5, 3 20) Lorsque es bou ons d'ancrage sont ret res, l ecran cathod que risque de sortir a l arrier de l'armo re IIO S40 et l OIC402 Si es deux bou ons d'ancrage arriere sont ret res, I faut reten r 'ecran afin d'ev ter toute blessure (p 4 23) Lorsque es bou ons d'ancrage sont ret res, l'ecran cathodique r sque de sort r a 'arr er de l'armoire L'ecran pese env ron 27 k ograms (60 pounds) et pourra t b esser quelqu un s on e laisse sort r de l armo re Assurez-vous de reten r l'ecran avant de ret rer les deux bou ons d'ancrange arr er (p. 7-4)

Sommaire de Securite (continued)

ATTENTION D'ORDRE SPECIFIQUE	Assurez-vous que e d sjoncteur de d'a mentat on princ pale est hors tension avant de mod f er le reg age de la tens on de service As surez-vous que toutes es et quettes apposees sur le b oc d a mentat on et sur e panneau d'entree de a mentat on ont ete modifiees pour correspondre au fonctionnment a 240 V c a (p 3 14)
	Ne pas inserer les cartes n les per pher ques te s que es derou eurs de bande et les imprimantes dans O S lorsque ce dernier est sous tension Les composantes de l'un te r squent d'etre endommagees par es po ntes de courant ou de tens on (p 3 17)
	N nsta ez ou ne ret rez jama s de per pher ques orsque l equip ment est sous tens on af n d'ev ter tout dommage mater e Assurez vous que tous es per pher ques et 'unite centra e sont hors tension (p 3-31)
	Ne branches jama s e derouleur de bande au VAXstat on orsque un ou l'autre de ces apprei s est sous tens on S non les bus du VAXsta- t on et le derouleur pourra t etre endommages (p 3-35, 4 29, 4 32)
	Si on omet d eteindre l' nterrupteur du c rcu t d'a imentat on pr ncipa avant de ret rer les cartes ou de es inserer dans e porte cartes, l'equipment pourrait faire default (p 4-6 4 7, 4 29, 4 31, 7-1)
	Sur a carte de connex on du panneau d' nterface au c av er es po es 5, 6 et 7 de ' nterrupter SW1 do vent etre fermes (reg age on) S non le VAXstat on s'endommagera (p 4 18)
	Si vous ne branchez pas e cab e-ruban du derouleur de bande en continu avant de mettre le derouleur sous tension le materiel pourra t fa re defaut Veu lez l re l'avertissement figurant a l'avant du panneau d entree d'al mentat on avant d'al menter e derouleur de bande Se lection- nez la meme tens on pour e derou eur en cont nu que pour la sort e du panneau de'entre d'a mentat on, s non le mater al pour- ra t sub r des dommages (p 4-28, 4-32, 4-53)
	Assurez vous que le d sjoncteur de d'al mentat on pr nc pa e est hors tens on avant de mod fier e reglage de a tension de serv ce (p 4 31)
	Soutenez le VAXstat on avant de retrer la dern ere v s de f xat on, sinon l'apparei pourra t subir des dommages (p 7-14, 7-16)

SECTION 1 - INTRODUCTION

OVERVIEW

The IIOIS40 Operator Interface Station contains a set of console electronics supporting up to two monitors. The IIOIC40 Opera tor Interface Console is a remote monitor and keyboard interface that connects to an operator interface station This section contains an overview of the OIS and OIC consoles

This document contains directions and cautions for install ing and servicing software on the operator interface station and the operator interface console. It provides instructions for loading software from release tapes, saving and restoring configurations and utilities

Read all of this manual to get the greatest benefit of the information it contains Read each procedure before doing the task Call the local Bailey Controls sales office for an swers to any questions

INTENDED USER

System engineers and technicians with a background in pull down window systems and accounts should read this manual thoroughly before installing and using the software ***Do not*** put the OIS console into operation until you read and thor oughly understand this manual This manual is a reference for experienced installers with installation and maintenance expe rience on process monitoring equipment It is not a tutorial

APPLICATIONS

The IIOIS40 Operator Interface Station is an integrated op erator console which provides a window into the process The IIOIS40 console provides the INFI 90® Strategic Process Man agement System with an interface that can acquire and report data.

The IIOIC40 Operator Interface Console is a remote operator interface for the IIOIS40 console It uses the OIS console to process trend data and control the process See Figure 1 1 for the OIS and OIC communication levels.

Features of the IIOIS40 and IIOIC40 consoles include

- Process monitoring and process control via flexible, dy namic, interactive color graphics for up to 30,000 pieces of data (tags) when the IIMCP02 module is used or 10,000 tags when the IIMCP01 module is used

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- Advanced alarm management to optimize operator response
- A trending package that offers a historical view of a process for analysis of current operations.
- A logging function that provides a paper history of a process and customized operations summaries
- An archiving function that provides a history of a process for analysis and process improvement
- On line diagnostics for the INFI 90 through system status displays.
- Configuration and tuning for the INFI 90 modules over the communication highway.

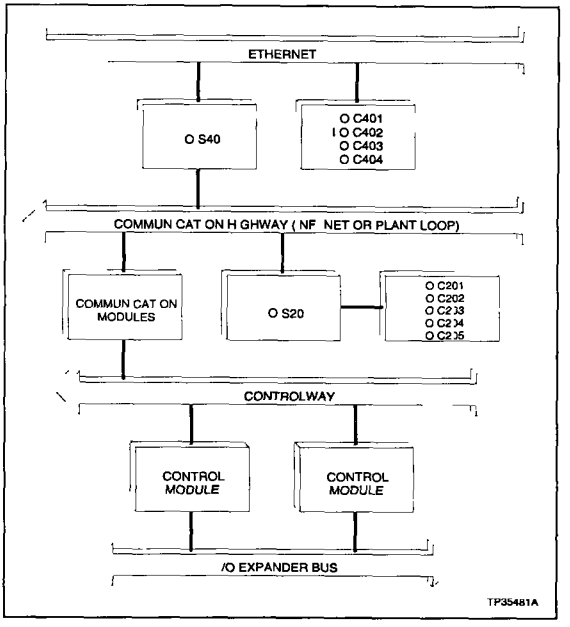

Figure 1 1 OIS and OIC Communication Levels

IIOIS40 HARDWARE OVERVIEW

The IIOIS40 console interfaces to INFI NET® and Plant Loop communication highways The OIS console can monitor and control a process through color graphics displays which show equipment status and process state

Table 1 1 lists the IIOIS40 Operator Interface Station models The IIOIS40 models are shown in Figure 1 2. Figure 1 2 shows the cabinets with doors open Refer to Section 4 for more information

WARNING	**Do not operate the OIS console with doors or covers opened or removed. Touching connections that carry current and voltage may cause injury.**
AVERTISEMENT	**Ne faites pas fonctionner l'OIS si les portes ou les couvercles sont ouverts ou retires. Tout contact avec les connexions ou circule du courant ou de la tension risque de provoquer des blessures**

Table 1 1. IIOIS40 Models

Nomenclature	Description
IIOIS401	Console with lower monitor
I O S402	Conso e with upper mon tor
I OIS403	Conso e with upper and lower mon tor
IIOIS40A	Driver cab net w th one set of e ectron cs
IOIS40D	Dr ver cab net w th dua electron cs

The console model may have a lower monitor, an upper monitor or both with the required power supply. card cage and interface hardware The driver cabinet performs the same function as the console The driver cabinet has no monitor or keyboard It requires a remote OIC console for operator interface.

OIS Console Hardware

The monitor, annunciator display panel (ADP) and I/O panel for the keyboard are in the upper half of the console cabinet The lower half of the console cabinet contains the power supply, power entry panel with cable connector panel, mul tibus card cage and VAXstation™ IIOIS40 software supports the VAXstation 3100

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OIS Driver Cabinet Hardware

The IIOIS40A cabinet has one set of OIS driver cabinet hard ware located in the bottom of the driver cabinet. The IIOIS40D cabinet has two sets of OIS electronics. The second set of hardware is located in the top half of the driver cabinet

In the IIOIS40A cabinet, the power entry panel with cable connector panel and VAXstation are in the lower half of the cabinet with the multibus card cage and power supply There is no annunciator display panel or keyboard interface panel in the driver cabinet. The power entry panel has a connection for input AC, alarm contact outputs, and cable connectors for peripheral devices.

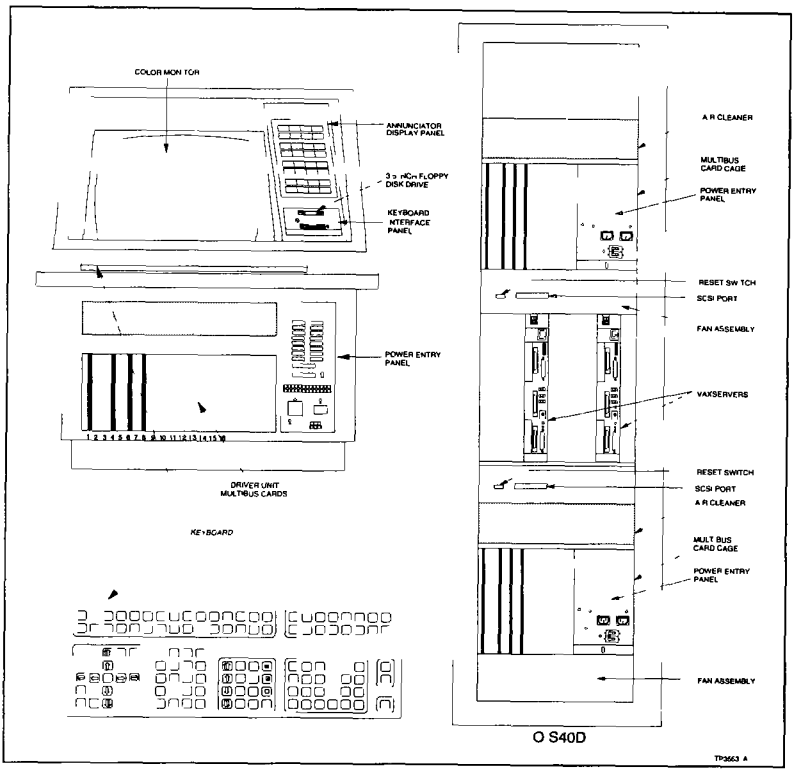

Figure 1 2 IIOIS40 Console and IIOIS40A and IIOIS40D Driver Cabinet Front View

IIOIC40 HARDWARE OVERVIEW

The OIC console provides a remote operator interface for display graphics, alarm summaries, INFI 90 status, logs trends and control stations The OIC console allows more than one operator to use a single main OIS console.

The four types of OIC hardware are console, environmental cabinet, 19 inch tabletop, and 19 inch panel mount models The console model (IIOIC402) may have a lower monitor, an upper monitor or both with a power entry panel and cable connector panel The console also has an ADP panel, opera tor keyboard and a VAXstation for each monitor

The environmental cabinet model (IIOIC403) contains a monitor, power entry panel with cable connector panel op erator keyboard, ADP panel and interface similar to the console model, 19 inch panel mount and 19 inch tabletop model

OIC hardware connects to the operator interface station with minimum wiring and configuring The OIC console connects to the OIS console through an Ethernet cable between the main VAXstation and the auxiliary VAXstation Refer to Sec tion 4 for more information on the hardware

IIOIC40 OPERATOR INTERFACE CONSOLE

There are six models of the IIOIC40 Operator Interface Con sole Table 1 2 lists the IIOIC40 models The IIOIC40 Operator Interface Console models are shown in Figure 1 3

Table 1 2 IIOIC40 Models

Nomenclature	Description
O C401	Tab etop operator nterface conso e (19 nch monitor)
IOIC4021	Console mode operator nterface conso e, ower mon tor
IIOIC4022	Console mode operator nterface console upper mon tor
IIOIC4023	Console mode operator nterface console dual mon tor
I OIC403	Env ronmenta cab net operator nterface conso'e
IIOIC404	Pane mounted operator nterface console

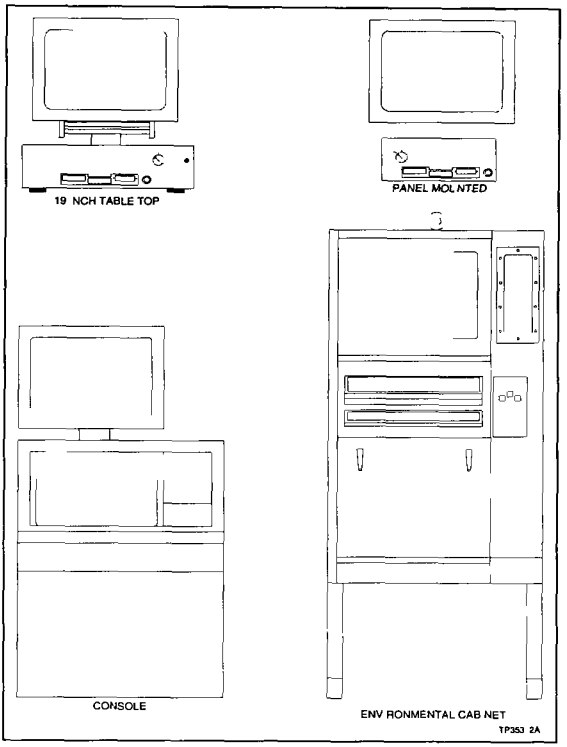

Figure 1 3 IIOIC40 Models. 19 Inch Tabletop, Panel Mounted, Environmental Cabinet and Console (clockwise)

OIC Console Hardware

OIC console hardware is the same as OIS console hardware except the OIC console has no floppy disk or hard disks and has 16 megabytes of memory

OIC Environmental Cabinet Hardware

OIC environmental cabinet hardware is located in the bottom of the cabinet The power entry panel and IIMKM02 Multibus Keyboard 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 contact relay outputs are for alarm annunciation only

OIC Panel Mounted Hardware

OIC panel mounted hardware is located behind the monitor and operator keyboard interface panel The power supply. power entry panel and IIMKM02 Multibus Keyboard Module are located with the monitor

The operator keyboard interface panel is mounted on a sepa rate panel The alarm contact relay outputs are for alarm annunciation only.

INSTRUCTION CONTENT

Introduction Presents an overview of the IIOIS40, IIOIC40 and related hard ware. It also provides a complete list of system specifications.

Description and Operation Describes the IIOIS40, IIOIC40 and related hardware

Installat on Describes the installation and wiring AC power to the power entry panel Be sure to read and follow all warnings and cautions Software installation explains how to install the software for the IIOIS40 console It also explains how to back up the hard disks Operation procedures lists steps to config ure, start up and shut down the OIS or OIC console

Hardware Describes the hardware and jumper settings of modules shipped with a standard IIOIS40 or IIOIC40 console at the time of this printing. Be sure to read and follow all warnings and cautions Be sure the model of the option being con nected is compatible with the IIOIS40 or IIOIC40 console

Troubleshooting Lists troubleshooting steps

Maintenance Contains a schedule for maintenance

Repair/Rep acement Procedures Describes how to replace hardware and the printed circuit boards in the multibus card rack

Service and New Parts Includes a spare parts list and ordering instructions

Quick Reference Information contains cable connections for the IIOIS40 IIOIC401, IIOIC402, IIOIC403, and IIOIC404 consoles and installation specifications

Redundant Ethernet Networks Explains how to set up redundant Ethernet networks It contains examples of Ethernet connections for the IIOIS40 and IIOIC40 consoles

RELATED EQUIPMENT

Hardware used with the OIS and OIC consoles includes the INFI 90 multi function processor modules and the Plant Loop and INFI NET communications modules

GLOSSARY OF TERMS AND ABBREVIATIONS

Table 1 3 contains a list of terms used in this manual

Table 1 3. Glossary of Terms and Abbreviations

Term	Definition
ADP	Annunc ator d splay pane
Baud Rate	Rate at wh ch data s transm tted over a ser al bus in b ts per second
Bus	A channe or path for transferring data e ectrica s gna s and power
Configuration	The act of setting up equ pment to accomp sh spec f c functions or a l st of parameters assoc ated with such a setup
DCE	Data commun cat on equ pment or data c rcu t term nat ng equ pment Equ pment that estab shes and term nates a commun cat on l nk between 2 dev ces n RS 232 C commun cat on systems, the DCE nomenc ature nd cates the s gna s that appear at spec f ed cable connect on contacts A modem is an examp e of this type of dev ce
Dipswitch	A dua n ne package that conta ns sw tches
DKA200	VAXstation 200 megabyte hard d sk (number 1)
DKA300	VAXstat on 100 megabyte hard d sk (number 2)
DKB400	The 3 5 nch floppy d sk dr ve nstal ed n the conso e
DMA	D rect memory access A method by wh ch data gets transferred d rect y to memory w thc ut processor nterven t on
DRAM	Dynam c random access memory Contents are lost when power s removed
DTE	Data term nal equ pment equ pment compr s ng the data source data s nk or both that prov des the commun cat on contro funct on n RS 232 C commun cat on systems, the DTE nomenc ature ind cates the s gna s that appear at spec f ed cab e connect on contacts Term na s and pr nters are examp es of th s type of dev ce
EPROM	E ectron ca y programmab e read on y memory Contents rema n when power s removed
ESD	E ectrostat c sens t ve dev ces Electron c components subject to damage or fa ure when exposed to an electrostat c charge, require spec al hand ng
Handshak ng	Procedures and protoco used by two devices to establish and mainta n commun cat on
INFI NET	Advanced data commun cat on h ghway
LED	L ght emitt ng d ode
LSB	Least s gn f cant b t The b t of a b nary number that carr es the least numer ca we gh t
MFP	Mu t funct on processor modu e A mult ple- oop contro er w th data acqu s t on and information process ng capab t es
MSB	Most s gnificant bit The bit of a binary number that carries the most numerica we ght

Table 1 3. Glossary of Terms and Abbreviations (continued)

Term	Definition
NVRAM	Nonvolatile random access memory Reta ns stored nformat on when power s removed
Node	A point of interconnect on to a network
Node Address	A unique ident f er of a spec fic device or a commun cat on channel Refers to Plant Loop or NFI NET address
OIS	Operator nterface station Integrated operator console w th data acqu sit on and reporting capabi t es prov d ng a d g tal access nto the process for flex b e control and monitor ng
OISENGR Account	Account for conf guration access and database work
OISWIN Account	Account to red rect, activate, de act vate and st windows
Parity Bit	A b t added to a byte character or word to ensure that there s a ways either an even number or odd number of ones according to the logic of the system t is used to ver fy the integr ty of the data
Parallel Data	Data transm tted s mu taneous y over mu t p e s gna nes
PCU	Process control unit A node on the plant wide communication network conta n ng contro and /O modu es
PEP	Power entry pane
PFI	Power fail interrupt A signal generated by the power entry panel when there s a oss of AC or DC nput power or an out of-to erance bus vo tage
Plant Loop	Network 90® data commun cat on h ghway
PROM	Programmable read only memory Contents remain when power is removed
RAM	Random access memory Contents are ost when power is removed
ROM	Read only memory Contents rema n when power s removed
RS 232-C and RS-485	Two seria commun cat on nterface standards developed by the E ectronics ndustry Assoc ation (EIA) spec fy ng what s gna s and voltages will be used to transmit data from a computer (DTE) to a modem (DCE)
SCSI	Sma computer system interface An I/O bus standard by the Amer can Nat ona Standard nst tute (ANS) that defines the protoco and periphera interconnect on formats of a high speed para e bus for use throughout the computer ndustry
Serial Data	Data transmitted sequentia y on one s gnal l ne
SLDG	Software ogg ng database graphics The of l ne configurat on uti ty for creat ng d splays
SYSTEM Account	A system account for ma n system def n tion area access
TK50	Streaming tape drive for the O S and O C conso es

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REFERENCE DOCUMENTS

Table 1 4 lists Bailey Controls Company manuals referenced in this manual

Table 1 4 Reference Documents

Number	Document
I E96-101	Operator Interface Stat on Operat on and Conf gurat on Manual IIOIS40
I-E96 500	S te P anni ng and Prepa-at on
I E96-706	Software Logg ng Database Graph cs Program

NOMENCLATURE

Table 1 5 contains the nomenclature used in this manual.

Table 1 5 Hardware Nomenclature

Nomenclature	Description
AKB02	QWERTY sty e aux ary (eng neer ng) keyboard
AMS02	Mouse cursor control er
ATB02	Trackba cursor contro er
DST02	Stream ng tape for arch va data storage (120V)
DST03	Stream ng tape for arch va data storage (240V)
MCL01	Mu t bus commun cat on oop modu e
MCP01	Mu t bus commun cat ons processor modu e
MKM02	Mu t bus keyboard modu e
MLM01	Mu t bus oop modu e
MRM01	Mu t bus reset modu e
O C401	Tab etop operator conso e w th a 19 nch mon tor t t/sw ve base and keyboard
O C4021	Conso e sty e operator console w th a ower mounted 19 nch mon tor and keyboard
O C4022	Conso e sty e operator conso e w th an upper mounted 19 nch mon tor w th t t/sw ve base and keyboard
O C4023	Conso e style operator conso e w th two 19 inch mon tors (one cab net mount and one t t/sw ve base mount) and a keyboard
O C403	Env ronmenta operator conso e with a 19 nch mon tor and keyboard
IOIC404	Pane mount operator conso e w th a 19- nch mon tor and eng neer ng keyboard
O S401	Operator nterface stat on ntegrated un t w th cab net mount mon tor and opt ona keyboard
O S402	Operator nterface stat on ntegrated un t w th mon tor w th t lt/sw vel base and keyboard
I O S403	Operator nterface stat on ntegrated un t w th dua mon tors (one cab net mount and one t t/sw ve base mount) and keyboard

Table 1 5 Hardware Nomenclature (continued)

Nomenclature	Description
IOIS40A	Operator nterface station driver cab net un t w th mu t bus card cage, cab e connector panel on the power entry panel An integrated unit with the same function as the O S conso e except for per phera devices such as mon tor and keyboard
IIOIS40D	Operator nterface stat on driver cab net un t w th 2 mult bus card cages, cable pane s and power entry panels An integrated un t w th the same funct on as two I OIS40 cabinets except for peripherals such as monitor and keyboard
PRT02	B ack and white printer
IPRT03	Co or pr nter (up to 64 co ors)
IIPRT04	Color v deo copier
IPRT05	H gh speed black and wh te pr nter

SPECIFICATIONS FOR IIOIS40 OPERATOR INTERFACE STATION

Table 1 6 contains the specifications for the IIOIS40 console

Table 1 6 IIOIS40 Specifications

Property	Characteristic/Value
Power	
L ne Vo tage	240 V nom nal (204 VAC to 264 VAC RMS) 120 V nom nal (103 VAC to 132 VAC RMS)
L ne Frequency	47 to 63 Hz
Power Consumpt on	

Model	Description	Amps
I O S4011 IOIS40'2	Conso e ow mon tor 120 VAC Conso e cw mon tor 240 VAC	2 77 1 6
I O S4021 IIOIS4022	Conso e - h gh mon tor 120 VAC Console high mon tor, 240 VAC	2 77 1 6
I O S4031 IIOIS4032	Conso e - dua mon tor 120 VAC Console dual mon tor 240 VAC	3 78 2 15
I O S40A1 IOIS40A2	Dr ver cab r et - 120 VAC Driver cab net - 240 VAC	1 65 1 02
IIOIS40D1 IOIS40D2	Driver cab net 120 VAC Driver cab r et 240 VAC	3 3 2 04

Hardware	
Memory	32 Mbytes
F oppy Disk	1 44 Mbytes
Hard Disk (2)	100 Mbytes and 200 Mbytes (unformatted)
Hard D sk Capacity (Total)	313 Mbytes

Table 1 6. IIOIS40 Specifications (continued)

Property	Characteristic/Value
Hardware (cont nued)	
Mon tor Reso ution	1024 x 864 pixe s
Monitors Supported per O S Conso e	I O S401 - 1 (plus up to 3 aux liary termina s) IIOIS402 - 1 (p us up to 3 aux iary term na s) IOIS403 2 (plus up to 2 auxil ary term nals) I OIS40A - 0 (p us up to 4 aux iary term nals) I O S40D 0 (plus up to 8 aux I ary termina s)
Keyboards	Two operator keyboards w th 6 output relays rated at 150 mA 24-28 VDC and 5 alarm tones per keyboard (future) The OIS40D can support up to 4 keyboards a other OIS models can support 2 keyboards
Conf gurat on	Nonvo at e ROM and hard disk memory
Attributes	
Tag Capac ty	10,000 w th MCPM01 modu e 30,000 w th MCPM02 modu e
Graph cs (D sp ays)	1 500
Trends	2,000
Custom Logs	100
Operator Conf gurab e D sp ays	25
SOE Logs/Reports	32/160
Dynam cs/Graphic	400
Max Mon tors per Un t	4
Pr nters per Un t	4
Trackba or Mouse	Yes
Annunc ator D sp ay Pane s	Yes
Custom Program Languages	C
Data Arch v ng Meo a	Magnetic tape
Max Trend Storage	3 months (refer to the ***Operator Interface Station (IIOIS40) Operation/Configuration Manual***)
Disp ay Resolution	1024 x 864

Alarm Relays	Ratings (Max)
Contact vo tage	24 VDC
Contact current	0 25 A
Contact power	6 W

Table 1 6 IIOIS40 Specifications (continued)

Property	Characteristic/Value
Environment	
Temperature	
Operat ng	10° to 40°C (50° to 104°F)
Storage	5° to 50°C (41° to 122°F)
Relative Humidity	
Operating	20% to 80% noncondens ng
Storage	10% to 95% noncondens ng
Altitude IOIS40A an IIO S40D Cab net	0 3 km to +3 km (1,000 ft to +10,000 ft)
A titude O S401 I O S4002 and O S4003 Conso e	-0 3 km to +2 4 km (1,000 ft to +8 000 ft)
Cooling Requirements	

Model	Description	Nominal Heat Dissipation BTU/Hr
IIO S40'	Conso e ow mon tor	760
I O S402	Conso e h gh mon tor	760
I O S403	Conso e dua mon tor	1070
I O S40A	Dr ver cab net	435
I O S40D	Dua O S dr ver cab net	870

Weight	

Model	Weight
O S401	184 kg (406 bs)
IIOIS402	211 kg (465 lbs)
IO S403	254 kg (560 bs)
IOIS40A	195 kg (431 bs)
I OIS40D	207 kg (456 bs)

Electrical Noise	Keep cabinet doors closec Do not use portable transm tt ng equipment w th n 2 meters of an O S or O C cab net
Certification	CSA certified for use in an ord nary (nonhazardous) contro ed env ronment

SPECIFICAT ONS SUBJECT TO CHANGE W THOUT NOT CE

SPECIFICATIONS FOR IIOIC40 OPERATOR INTERFACE CONSOLE

Table 1 7 contains the specifications for the IIOIC40 console

Table 1 7. IIOIC40 Specifications

Property	Characteristic/Value
Power	
L ne Vo tage	240 V nom nal (204 VAC to 264 VAC RMS) 120 V nom nal (103 VAC to 132 VAC RMS)
L ne Frequency	47 to 63 Hz
C rcu t Breaker S ze	20 A c rcuit breaker for I O C403 10 A c rcu t breaker for O C401, O C402 and IIOIC404 consoles
Power Consumption	
Power Supply	
I O C401/02/03/04 Power Supply Outputs	+5 VDC at 20 A +12 VDC at 5 A 12 VDC at 1 A +12 VDC at 1 A (fan)
Hardware	

Model	Description	Amps
IOIC40101 IOIC40102	19 nch mon tor tab etop, 120 VAC 19 nch mon tor tab etop 240 VAC	2 51 1 50
IOIC40211 IOIC40212	Console ow mon tor, 120 VAC Conso e ow mon tor 240 VAC	2 51 1 50
OIC40221 O C40222	Conso e h gh mon tor 120 VAC Conso e h gh mon tor 240 VAC	2 51 1 50
O C40231 OIC40232	Conso e dua mon tor 120 VAC Conso e dua mon tor 240 VAC	2 74 1 64
O C40301 O C40302	Env ronmenta , 120 VAC Env ronmenta , 240 VAC	3 28 1 92
O C40411 I O C40412	Pane mount, 120 VAC Pane mount 240 VAC	2 51 1 50

Model	Monitors	Keyboards (IIMKM02s)
IOIC401 I O C4021	1 1	1 1
I O C4022 I O C4023	1 2	1 1
I OIC403 I O C404	1 1	1 1 (opt ona)

Table 1 7. IIOIC40 Specifications (continued)

<table>
<tr><th>Property</th><th>Characteristic/Value</th></tr>
<tr><td>Hardware (cont nued)
Keyboards</td><td>Two operator keyboards w th 6 output relays rated at 150 mA 24-28 VDC and 5 a arm tones per keyboard (future)
<table>
<tr><th>Alarm Re ays</th><th>Ratings (Max)</th></tr>
<tr><td>Contact vo tage
Contact currant
Contact power</td><td>24 VDC
0 25 A
6 W</td></tr>
</table></td></tr>
<tr><td>Attributes</td><td>O C attributes are determ ned by the ma n O S conso e</td></tr>
<tr><td>Environment
Temperature
Operating
Storage
Re at ve Hum d ty
Operat ng
Storage
Altitude</td><td>

10° to 40°C (50° to 104°F)
5° to 50°C (41° to 122°F)

5% to 40% noncondens ng
5% to 95% noncondensing
Sea level to 2 4 km (8000 ft)</td></tr>
<tr><td>Cooling Requirements</td><td>
<table>
<tr><th>Model</th><th>Description</th><th>Nominal Heat Dissipation BTU/Hr</th></tr>
<tr><td>I O C401
I O C402
O C4022</td><td>19 nch tab etop
Conso e
Conso e</td><td>670
670
670</td></tr>
<tr><td>IOIC4023
O C403
I O C404</td><td>Conso e
Env ronmenta cab net
19 nch pane mount</td><td>760
1010
670</td></tr>
</table></td></tr>
<tr><td>Weight</td><td>
<table>
<tr><th>Model</th><th>Weight</th></tr>
<tr><td>IOIC401
I O C4021
I O C4022</td><td>91 kg (201 bs)
184 kg (406 bs)
21¹ kg (465 bs)</td></tr>
<tr><td>O C4023
IO C403
IIOIC404</td><td>254 kg (560 bs)
233 kg (513 bs)
72 kg (159 lbs)</td></tr>
</table></td></tr>
</table>

Table 1 7. IIOIC40 Specifications (continued)

Property	Characteristic/Value
Electrical Noise	Keep cabinet doors closed Do not use portab e transmitt ng equipment w th n 2 meters of an O S or O C cabinet
Certification	CSA cert f ed for use in an ordinary (nonhazardous) *contro led environment*

SPEC F CA ONS SUBJEC" "O ChANGE W "nOu" NO" CE

SECTION 2 - DESCRIPTION AND OPERATION

INTRODUCTION

This section explains the theory of operation for the IIOIS40 Operator Interface Station and the IIOIC40 Operator Interface Console An operator uses the OIS console to monitor and control the process The OIS console shows equipment status and process states with interactive color graphics displays Each display can use dynamic variables and symbols allowing data to be condensed in each display Any graphic element can be mixed with any symbol on any display such as schematics, faceplates, trends and alarm summaries For IIOIS40 and IIOIC40 operating procedures, refer to the ***Operator Interface Station (IIOIS40) Operation/Configuration Manual.***

OIS FUNCTIONAL OPERATION

The IIOIS40 console is an operator interface with state of the art VAXstation technology, a user friendly operator interface and a high performance INFI 90 system interface

The VAXstation 3100 model 38 is the key component in the IIOIS40 console (VAXserver™ 3100 model 10e for the IIOIS40A cabinet) The model 38 and 10e contain a CPU, memory, SCSI and graphics card, as well as a 100 megabyte and a 200 megabyte disk drive

NOTE: The IO S40 conso e uses a VAXstat on 3100 mode 38 The IOIS40A cab net uses a VAXserver 3100 mode 10e The IOIC40 conso e uses a VAXstat on 3100 mode 38 w thout hard drives or a f oppy dr ve

The video display is a 1024 x 864 RGB monitor See Figure 2 1 for a block diagram of the IIOIS40 functions and connections The multibus cards use the backplane only for power, ground and reset connections

Figure 2 1 shows a block diagram of the IIOIS401, IIOIS402, IIOIS403, IIOIS40A and IIOIS40D consoles.

The NIU modules give the OIS console access to system process data and communication data by interfacing it to INFI NET or Plant Loop. Three cards in the multibus card cage make up the NIU module. They are the IIMCL01 Multibus Communication Loop Termination Module, IIMLM01 Multibus Loop Module and IIMCP01 Multibus Communication Processor Module The MCL module in slot eight of the multibus card cage connects to the loop Front edge connectors

TM VAXserver s a trad'mark of D g tal Equ pment Company

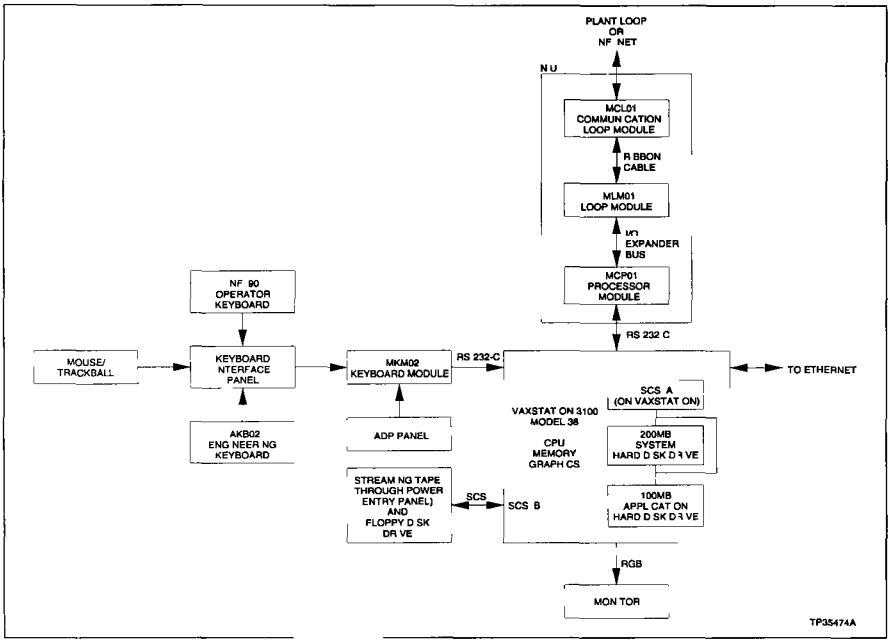


Figure 2 1 IIOIS40 Block Diagram

on the MCL module terminate a redundant coaxial or twi naxial cable of the loop A ribbon cable connects the MCL module to the MLM module in slot six The MLM module converts analog loop signals to digital format for the MCP module A ribbon cable connects the MLM module to the MCP module. The MCP module is the NIU processor card A cable connects the MCP module to the IIOIS40 VAXstation The NIU and MRM modules connect to the VAXserver 3100 model 10e in the IIOIS40A cabinet

The IIMKM02 module (IIMRM01 module on IIOIS40A and IIOIS40D cabinet) keyboard interface provides a connection for the keyboard, all user interfaces, and the system reset signal A cable connects the MKM module to the keyboard connector on the VAXstation

The VAXstation model 38 with disk drives controls the OIS console The VAXstation inside the swing out door in the back of the cabinet controls the first monitor The optional VAXstation on the outside of the swing out door in the back

of the cabinet of the OIS console is for a second monitor on the OIS console or a monitor with remote mounting A cable con nects the VAXstation to the RGB connectors on the back of the monitor The VAXstation model 38 with disk drives also allows the operator to communicate with the printers on the Ethernet

The IIOIS40 VAXstation model 38 uses a 3 5 inch 1 4 megabyte flexible disk drive with controller The IIOIS40 VAXstation model 38 and IIOIC40A VAXstation model 10e use two 3 5 inch hard disk drives (100 megabyte and 200 megabyte). A SCSI connection is provided for streaming tape storage

Refer to Section 4 for more information on OIS modules and units

OIC FUNCTIONAL OPERATION

The OIC 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 VAXstation Com mands between the OIC and OIS consoles pass through an Ethernet cable The Ethernet cable connects from the Thin Wire™ port of the auxiliary VAXstation to the ThinWire port ot the main VAXstation

NOTE The O C40 conso e uses a VAXstat on 3100 mode 38 w thout hard dr ves or a f oppy dr ve

In the IIOIC40 console, the VAXstation inside the swing out door in the back of the cabinet controls the first monitor The VAXstation on the outside of the swing out door sends video signals to the second monitor A cable connects the VAXsta tion to the RGB connectors on the back of the monitor

Figure 2 2 shows a block diagram of the IIOIC401 and IIOIC404 consoles Figure 2 3 shows a block diagram of the IIOIC402 console Figure 2 4 shows a block diagram of the IIOIC403 console

Refer to Section 3 for OIS and OIC VAXstation connections Refer to Section 4 for modules and units

SOFTWARE OPERATION

The procedure described in this section reflects software re lease E 1 The procedure for booting up the OIS console may vary with the software release Software release E 1. follows the format described in this section. Upon power up, the system runs through a series of diagnostics for approximately two minutes After passing the diagnostics, the system automat ically continues to boot up into a windowed session

TM Th nW re s a trademark of D g tal Equ pment Corporation

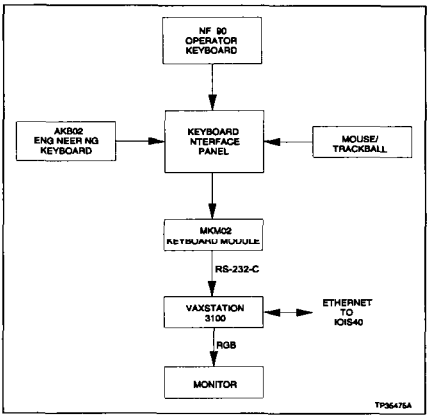


Figure 2 2. IIOIC401 and IIOIC404 Block Diagram

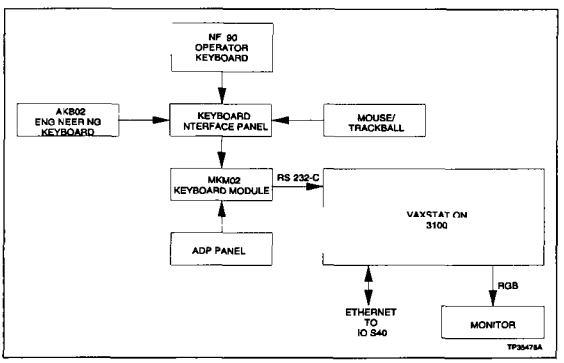


Figure 2 3. IIOIC402 Block Diagram

The system and the software continues to run activating the engineering keyboard or the Bailey Controls membrane key board This allows the operator to call up various displays

If the power up diagnostics fail, the screen displays the >>> prompt with an error code The ***VAXstation 3100 Model 38***

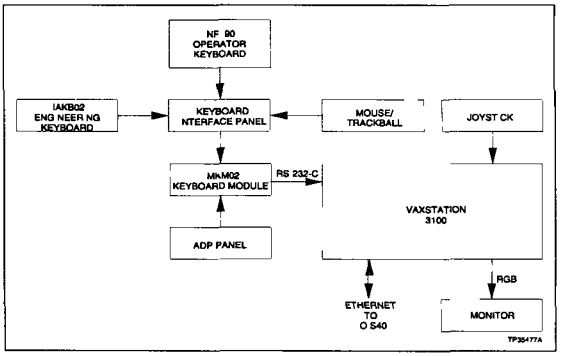


Figure 2 4 IIOIC403 Block Diagram

Customer Hardware Information manual contains details of possible diagnostics and error codes

The VAXstation 3100 model 38 and VAXserver 3100 model 10e have two SCSI busses The internal bus (A) connects the two hard disks The RZ24 200 megabyte disk is set for SCSI ID 2 The RZ23 100 megabyte d sk is set for SCSI ID 3 The external bus (B) connects the RX23 floppy controller and floppy with SCSI ID 4 and the power entry panel streaming tape connector A 50 pin SCSI terminator is inserted into this connector. This terminator is removed in order to cable the TK50 streaming tape drive with SCSI ID 5 This same termi nator or an equivalent one must be installed on the back of the streaming tape drive Refer to Section 4 for the streaming tape drive settings

NOTES:

1 A SCSI term nator must a ways be connected to the last dev ce on the external SCSI bus

2 A SCS cab es and sw tches must be proper y set

The red reset switch on the IIOIS40 and IIOIC402 power entry panel is a two pole double throw momentary switch Pressing the switch at the top (PARTIAL) resets the modules in the multibus and the keyboard (for INFI 90 keyboard and NIU) in approximately one minute. Partial reset does not reset the VAXstation Pressing the switch at the bottom (FULL) resets both the multibus and the VAXstation in ap proximately 15 minutes Use the partial reset if the keyboard

does not respond Use the full reset if the OIS console does not respond For OIS and OIC operating procedures, refer to Section 3

NOTES

1 Resetting the VAXstation halts the VAXstation and the screen displays the >>> prompt This requires typing **B** and [Return] from the engineering keyboard in order to boot the system into the login display

2 The full reset operates a software wh ch presses and releases the **HALT** button on the VAXstation

3 The I O S40A and I O S40D power entry panel has no reset button for the VAXserver Reset the VAXserver from the button on the back of the IOIS40A and I O S40D VAXserver chassis See Figure 3 10 in Section 3

LOGIC POWER

A 130 watt internal power supply converts the AC input to the DC voltages needed to power the OIS or OIC electronics (+5, ±12 VDC) Refer to Section 4 for more information on the power supply

ETHERNET

Ethernet is an engineering standard complying with IEEE Standard 802 3 It is a CSMA/CD protocol (with no token) All devices on the Ethernet network listen to the data transmissions When the line is open, a device with a message to send can transmit at a rate of up to 10 megahertz

DECnet™ is a proprietary Ethernet protocol meeting the IEEE Standard 802 3. The OIS console uses DECnet protocol to transmit over the Ethernet network 50 ohm cables Connecting a network with the same protocol to a DECnet network requires a bridge Connecting a network with a different protocol (non Ethernet) to a DECnet network requires a gateway Refer to the vendor documentation shipped with the OIS and OIC console, Section 3 and Appendix B for more information

TM DECnet is a trademark of Digital Equipment Corporation

SECTION 3 - INSTALLATION

INTRODUCTION

This section explains how to install and prepare the IIOIS40 (OIS) and IIOIC40 (OIC) for operation Read and understand these steps before installing the OIS console Call the local Bailey Controls sales office before starting with questions about installing or setting up the OIS or OIC console

Read this section for steps to install the OIS console hard ware and software

SPECIAL HANDLING

The IIOIS40 and IIOIC402 consoles weigh approximately 460 to 1023 kilograms (201 to 465 pounds) Be sure to move the cabinet with equipment rated for this weight

The IIOIS40A and IIOIS40D cabinet, and IIOIC403 console weigh approximately 948 to 1133 kilograms (431 to 513 pounds) Be sure to move the cabinet with equipment rated for this weight

Table 3 1 lists the weight of the IIOIS40 and IIOIC40 consoles Table 3 2 lists the IIOIS40 and IIOIC40 cabinet dimensions

HARDWARE SETUP ELECTROSTATIC DISCHARGE CONTROL

The OIS console contains circuit boards using CMOS compo nents Before removing a module from the multibus card cage or doing maintenance on equipment having static sensi tive devices, read this section

Table 3 1 IIOIS40/IIOIC40 Weights

Model	Weight	
	kg	lbs
I O S401	893	406
I O S402	1023	465
O S403	1232	560
I O S40A	948	431
I O S40D	1003	456
O C401	460	201
I O C4021	893	406
I O C4022	1023	465
IOIC4023	1232	560
O C403	1133	513
I O C404	350	159

Table 3 2. IIOIS40 and IIOIC40 Dimensions

Nomenclature	Description	Dimensions					
		Height		Width		Depth	
		cm	in.	cm	in.	cm	in.
O S401	Conso e ow mon tor	107 27	42 23	71 12	28 00	109 01	42 92
O S402	Conso e h gh mon or	156 94	61 79	71 12	28 00	109 01	42 92
O S403	Conso e dua mon or	156 94	61 79	71 12	28 00	109 01	42 92
O S40A	Dr ver cab net	221 28	87 12	60 96	24 00	76 20	30 00
I O S40D	Dr ver cab net	221 28	87 12	60 96	24 00	76 20	30 00
O C401	19 nch tab etop mon tor	61 00	24 00	51 30	20 00	55 90	22 00
I O C4021	Conso e ow mon tor	107 27	42 23	71 12	28 00	109 01	42 92
O C4022	Conso e h gh mon tor	156 94	61 79	71 12	28 00	109 01	42 92
O C4023	Conso e dua mon tor	156 94	61 79	71 12	28 00	109 01	42 92
O C403	Env ronmenta mon tor	177 80	70 00	76 20	30 00	85 90	33 82
O C404	Pane Mount mon tor	37 39	14 72	45 67	17 98	61 41	24 17

Static susceptible devices are likely to be damaged from contact with potential static charges more than 6.25 volts This potential when placed across the leads of a static sus ceptible device, can damage the oxide layers within the package Latent or immediate damage may result Latent damage may not be detectable under normal circuit check out, but may result in a reduced life of equipment or reduced system functions

Methods for preventing damage involve equalizing the poten tials across all static susceptible device terminals and across the static susceptible device working area, tooling and opera tor The most common method is to connect tools, assembly equipment and the operator to earth ground This procedure should be followed at all stages of handling

Special handling procedures help avoid damage to the printed circuit boards

1 *Personnel working with or handling printed circuit* boards need to be grounded by wearing conductive wrist ground straps

NOTE: A ways use the Ba ey Contro s F e d Stat c K t (part n mber 1948385A1 cons st ng of a wr st strap ground cord assemb y, a gator c p and stat c d ss pat ng work surface) when work ng w th the OIS or O C conso e The k t s des gned to connect tha techn c an and the stat c d ss pat ng work surface to the same gro und po nt to prevent damage to the modu es by e ectrostat c d scharge

2 Personnel wearing silk, wool or synthetic clothing shall wear a conductive material smock Personnel shall keep all plastic and textiles which are not antistatic away from static susceptible devices and work stations

3 Use antistatic containers and bags Store electrostatic discharge sensitive equipment in these containers or bags when they are not in the system

4 Ground containers and bags before opening

5 Ground test and assembly equipment

6 Work stations need to be constructed or covered with conductive materials

7 Keep the work area free of plastic styrofoam, cellophane, vinyl materials (e g coffee cups, cup holders, cigarette packages, combs, books, folders)

8 Be sure the tools that come into contact with static susceptible devices are made of conductive materials and provide a means for connection to ground

9 Use soldering irons with a grounded tip that are approved for use on static susceptible devices

UNPACKING AND INSPECTION

Compare the shipment to the invoice upon receiving the OIS or OIC console Examine the shipping crate for damage Report any damage immediately to the carrier If repair is needed notify the nearest Bailey Controls sales or service office

If the OIS console is not put into service when delivered, store it in its original shipping package If the OIS console is to be stored, maintain the storage defined in the environmental specifications in Section 1 of this manual

PLANNING AN INSTALLATION

Refer to the ***Site Planning and Preparation*** manual for site selection, preparation and hardware installation of the INFI 90 control system This document includes requirements of load bearing for floors space around equipment temperature, humidity, shock and vibration It also covers the AC power wiring, power and DC signal common grounding, line conditioning, uninterruptible power supplies, radio frequency interference, electrostatic discharge, lighting and equipment protection Refer to the table in Section 1 for the document number

SAFETY CONSIDERATIONS

Do not remove or install circuit boards with power applied to the OIS or OIC 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 Re move DC power to all DC wiring when removing or connecting DC wires or circuit boards to prevent damage to equipment

IIOIS40 PHYSICAL DESCRIPTION

The OIS operator interface station has front and rear swing out doors with individual locks The front door has slotted openings for the air intake to cool the inside of the cabinet The cabinet has a stabilizer which must be fastened to the front of the cabinet when the OIS console is not secured to the floor The 6 4 centimeters (2 5 inches) diameter cable entry is located at the bottom right rear of the unit There is also a bottom cable entry in the cabinet

The hardware in an IIOIS401 console consists of

- 19 inch color monitor (1024 x 864 pixels)
- Operator keyboard with 16 user defined keys (32 keys if the shift key is used)
- INFI NET or Plant Loop interface
- 100 megabyte hard disk drive
- 200 megabyte hard disk drive.
- 32 megabyte memory
- 1 4 megabyte floppy disk drive, 3 5 inch format
- Annunciator relays and audible tones
- 32 key annunciator display panel (ADP)
- Battery backed real time clock
- VAXstation 3100 model 38 with hard disks.

There are two VAXstations in the IIOIS402 and IIOIC4023 consoles the main and auxiliary. They are both in the con sole cabinet The main VAXstation is connected to the MKM multibus module The VAXstation contains the hard disk drives and is connected to the IIOIC40 operator consoles

IIOIS402 SETUP AND PHYSICAL INSTALLATION

Before the OIS console is set into place in a control room, insure that the floor is level in the area where the cabinets will be set Adjust the leveling screws on all cabinets and connecting tables until the monitor bezel of each cabinet

lines up The leveling screws adjust 2 56 centimeters (1 05 inches) After securing the cabinets, put the tables on the cabinets and lock them into place by pushing 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 ta bletops 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

There are 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

Protect the wires and cabling going to the OIS cabinet 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 con duit Refer to the ***Site Planning and Preparation*** manual for more information

Figure 3 1 and Figure 3 2 show the IIOIS401, IIOIS402 and IIOIS403 console and IIOIC4021, IIOIC4022 and IIOIC4023 cabinet dimensions Figure 3 3 shows the IIOIS40 or IIOIC40 keyboard table Figure 3 4 shows the 15 degree wedge table dimensions Figure 3 5 shows the 45 degree wedge table dimensions

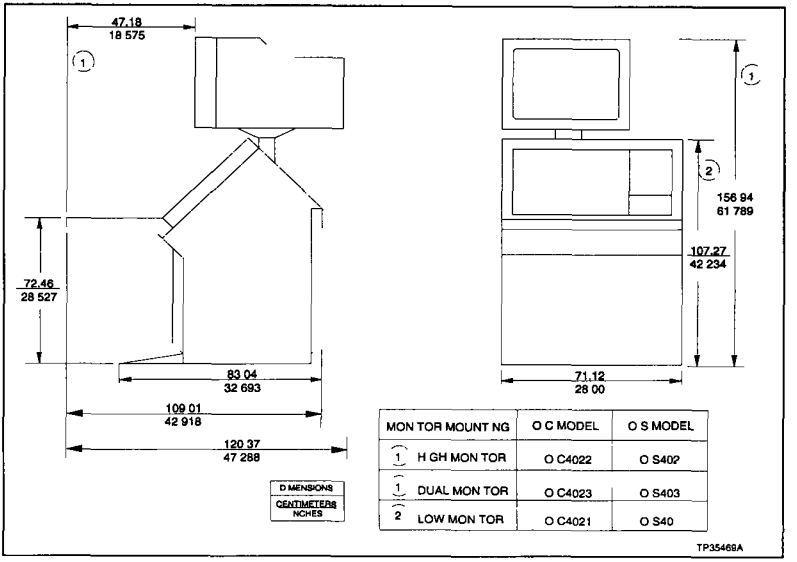
OIS Console Component Locations

Figure 3 6 shows the rear view of the OIS console with the door removed. This figure shows the location of the hardware in this unit Refer to Section 4 for the layout of the multibus card cage and the power entry panel

NOTE: F gure 3 6 s shown w th power removed

WARNING	**Do not operate the OIS console with doors or covers opened or removed. Touching connections that carry current and voltage may cause injury.**
ATTENTION	**Ne faites pas fonctionner l'OIS si les portes ou les couvercles sont ouverts ou retires. Tout contact avec les connexions ou circule du courant ou de la tension risque de provoquer des blessures.**

OIS console hardware is located in the cabinet The power entry panel with cable connector panel, and VAXstation are in the lower half of the cabinet with the multibus card cage



MONITOR MOUNTING	OIC MODEL	OIS MODEL
(1) HIGH MONITOR	OIC4022	OIS402
(1) DUAL MONITOR	OIC4023	OIS403
(2) LOW MONITOR	OIC4021	OIS40

NOTE Extended door is on dual monitor consoles

Figure 3-1. IIOIS401/2/3 IIOIC4021/2/3 Cabinet Dimensions

The monitor, power supply, annunciator display panel and keyboard interface panel are located in the upper half of the cabinet.

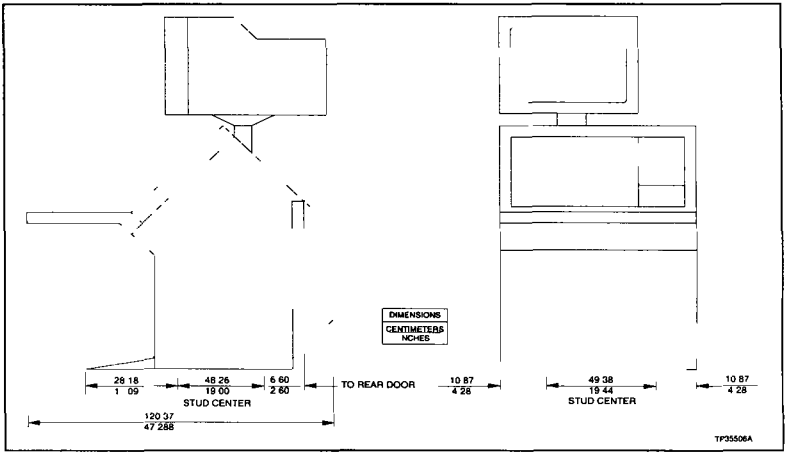
The keyboard interface panel is located beside the monitor on the front of the cabinet. It is made up of the floppy disk drive and connections for the keyboard, mouse or trackball and an engineering keyboard.

The power entry panel has terminals for input AC. The power entry panel has alarm contact outputs located on a terminal block and cable connectors for peripheral devices. The alarm contact relay outputs are for alarm annunciation only.

Table 3-3 lists the multibus card cage modules.

IIOIS40A AND IIOIS40D PHYSICAL DESCRIPTION

The IIOIS40A and IIOIS40D Operator Interface Station Driver Cabinet has a front and rear swing out door with individual locks. The front and rear doors seal in the air that is cooled by the internal cooling system. Two cable entries are located



NOTES
1 O S402 or O C4022 conso e mode s shown
2 Extended door s on dua mon lor conso es
3 Stud center to outs de of rear door s 17 96 cent meters (7 07 nches)

Figure 3 2 IIOIS401/2/3 IIOIC4021/2/3 Anchoring Dimensions

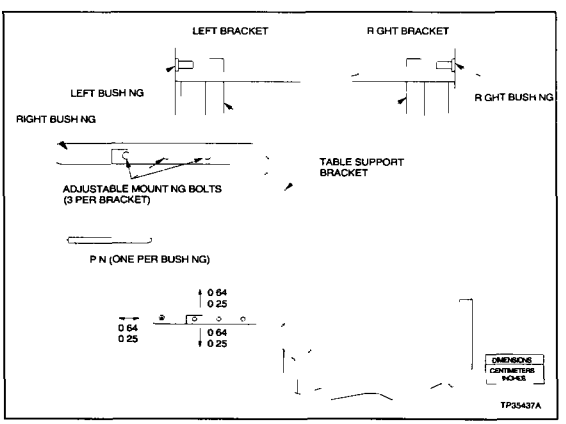


Figure 3 3. OIS/OIC Keyboard Table

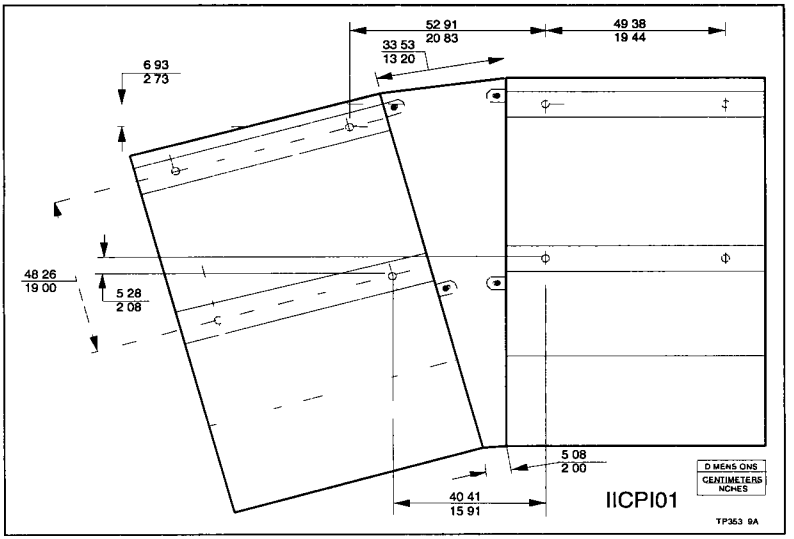


Figure 3 4 OIS/OIC 15 Degree Wedge Dimensions

at the bottom of the unit The cabinet dimensions are shown on Figure 3 7

The hardware in an IIOIS40A driver cabinet consists of

- INFI NET or Plant Loop interface
- 200 megabyte hard disk drive
- 100 megabyte hard disk drive
- 32 megabyte memory
- 1 4 megabyte floppy disk drive, 3 5 inch format
- Battery backed real time clock
- VAXserver model 10e

IIOIS40A AND IIOIS40D SETUP AND PHYSICAL INSTALLATION

Before the IIOIS40A or IIOIS40D cabinet is set into place, insure that the floor is level in the area where the cabinet will be set The unit must be secured to the floor before it is wired

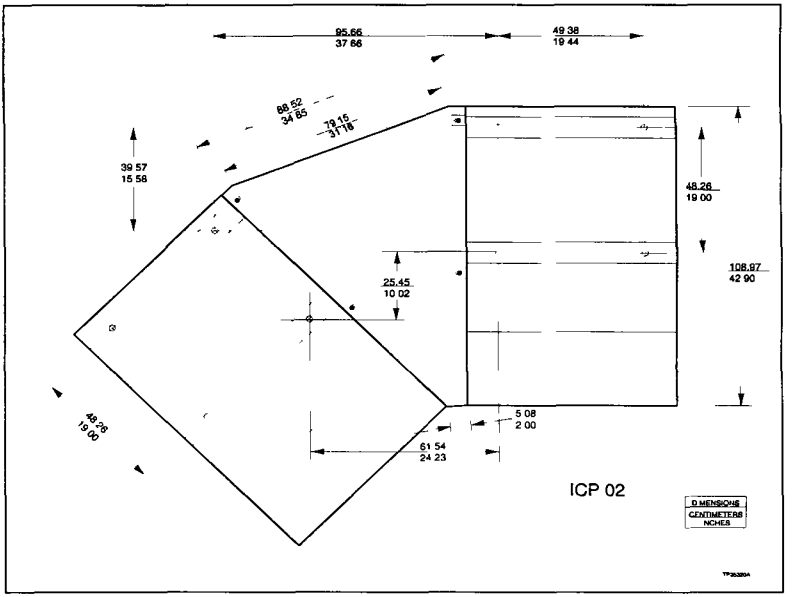


Figure 3 5 OIS/OIC 45 Degree Wedge Dimensions

or operated The dimensions for locating the mounting screws are shown in Figure 3 8

Protect the wires and cabling going to the OIS driver cabinet 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 For more information, refer to the ***Site Planning and Preparation*** manual

OIS Driver Cabinet Components Location

Figure 1 2 shows the front view of the OIS driver cabinet with the door removed This figure shows the location of the hardware in this unit Refer to Section 4 for the layout of the multibus card cage and cable connector panel on the power entry panel

Table 3 3 lists the modules in the multibus card cage of the OIS console and the OIS driver cabinet

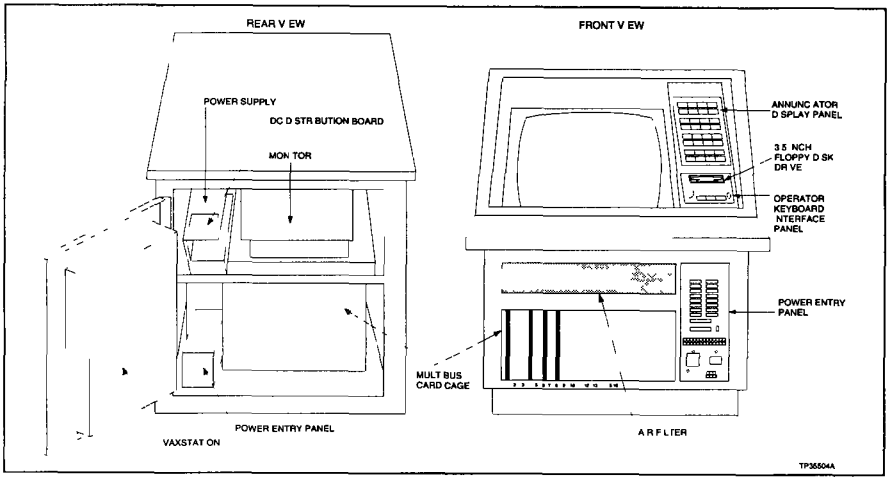


Figure 3 6 IIOIS401 and IIOIC4021 Console Front and Rear Views

Table 3 3 Multibus Card Cage Modules

Slot	Card	Description
1	MKM02	OIS conso e and O C conso e The mu t bus keyboard modu e cc nnects the keyboard nterface pane to the VAXstat on
1	MRM01	Dr ver cab ne The mu t bus reset modu e prov des system reset
4	MCP01 or MCP02	The mu t bus com mun cat on processor modu e conta ns a l brary of commands wh ch send and retr eve data from other process contro un ts anc conso es
6	MLM01	The mu t bus oop modu e a ows the I MCL01 modu e and the I MCP01 or IMCP02 modu e to commun cate together
8	MCL01	The mu tibus communicat on oop terminat on modu e term nates the coax a or tw nax a cab e of the commun cat on loop

IIOIS40 WIRING CONNECTIONS AND CABLING

Table 3 4 contains the color codes for wiring the IIOIS401, IIOIS402 and IIOIS403 console or IIOIS40A and IIOIS40D cabinet Table 3 5 contains a list of cables and their connec tions Figure 3 9 shows the IIOIS40 cable connections Figure 3 10 shows the chassis connections for the VAXsta tions in the IIOIS401, IIOIS402 and IIOIS403 and IIOIS40A consoles Figure 3 11 shows the chassis connections for the VAXstations in the IIOIS403 and IIOIC4021 IIOIC4022, IIOIC4023 and IIOIC4024 consoles.

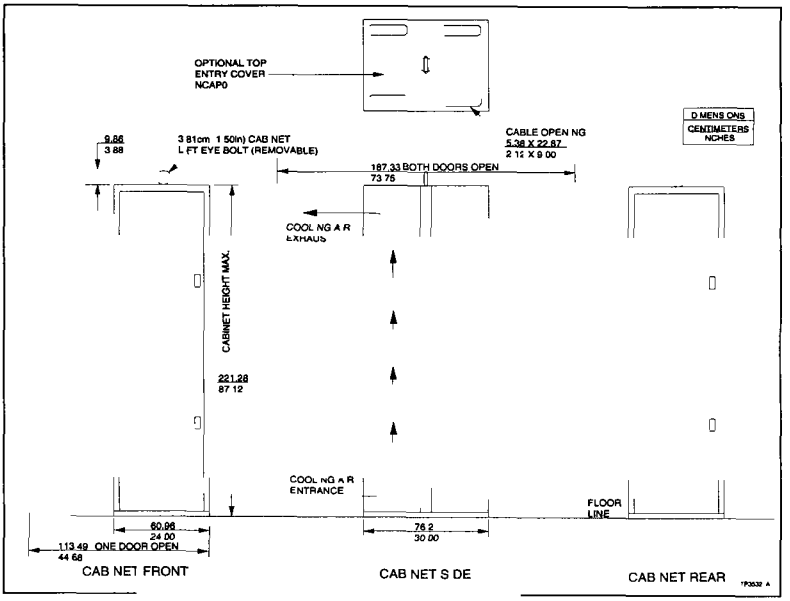


Figure 3 7 IIOIS40A/D Cabinet Dimensions

The OIS console is internally wired when it is shipped Connect the communication loop cables, AC power and any peripheral devices AC power is connected to TB1 on the power entry panel Communication loop cables connect to the IIMCL01 module in the multibus card cage Peripheral devices connect to the front of the power entry panel or to the keyboard interface panel Refer to Section 4 for specific instructions on installing and configuring peripheral devices and replacement components

Peripheral Device Connections

There are peripheral device ports on the keyboard interface panel located beside the monitor and on the power entry panel The SCSI port on the power entry panel is not used at this time The streaming tape port on the power entry panel connects to an optional streaming tape reader The keyboard port on the keyboard interface panel connects to the keyboard shipped with the OIS console The Aux 1 port on the keyboard interface panel connects to an optional tabletop annunciator display panel (ADP) The mouse or trackball port supports either a

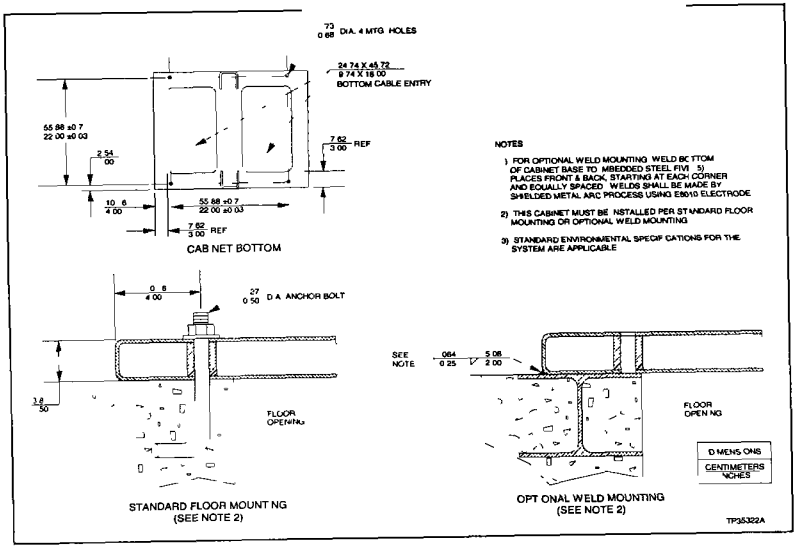


Figure 3 8 IIOIS40A/D Anchoring Dimensions

Table 3 4 OIS Wiring Color Codes

Color	Function
Brown	AC hot
Blue	AC neutral
Green/Yellow	AC common
Brown	+5 VDC
White/Green	DC common
Violet	12 VDC
White/Violet	+12 VDC
Green	-Remote voltage sense signal wire
White	+Remote voltage sense signal wire

mouse or trackball cursor controller The AUX KBD port connection is for an IIAKB02 optional engineering keyboard Refer to Section 4 for more information on peripheral devices

Table 3 5 IIOIS40 Cable Connections

Cab e Number	Cable Name	Connect From	Connect To
6637599A1	AC power	J1 on power entry pane	AC H on ma n power supp y AC LO on ma n power supp y Ground on ma n power supp y
1947950A1	AC power	J2 on power entry pane	AC power n on ma n VAXstat on
1947950A1	AC power	AC power out on ma n VAXstat on	AC power connector on mon tor 1
1947950A5	AC power	J3 on power entry pane	AC power n on aux ary VAXstat on
1947950A5	AC power	AC power out on aux ary VAXstat on	AC power connector on mon tor 2
1948768A1	/O s gna	P9 on MKM02 modu e	/O port on ma n VAXstat on
1948768A2	Keyboard s gna	P8 on MKM02 modu e	Keyboard port on ma n VAXstat on
1948806A50	F oppy d sk contro er	SCS port on ma n VAXstat on	F oppy d sk contro er Stream ng tape port on power entry pane
1948768A2	Commun cat on	P5 on MCPA modu e	Pr nter port on VAXstat on ma n
6634512A26N2	nterna /O	P4 on MCPA modu e	P4 on I MLM01 modu e
6634512A26N2	nterna /O	P3 on MCL01 modu e	P3 on MLM01 modu e
6634512A26N72	/O d str but on	P5 on MKM02 modu e	P1 on keyboard nterface board
6634512A26N72	/O d str but on	P6 on MKM02 modu e	Rear of term na b ock on power entry pane
6637776A2	Wr st ground	User	Wr st connector on power entry pane
6638706A1	Power	CH1+ and CH1 on power supp y	TB3, TB4 TB5 and TB6 on backp ane
6638707A1	Powe	CH+ a d CH u powe supp y	Te a str p u DC d st but u board
6638708A1	Power	±12 VDC on backp ane	Term na str p on DC d str but on board
6638712A1	PF sense	J1 on power supp y	P3 on MKM02 modu e
6638713A1	Per phera power	J1 on keyboard nterface board	P3 on DC d str but on board on ma n power supp y
6638713A3	Per phera power	F oppy dr ve contro er	P2 on DC d str but on board on ma n power supp y
6638720A1	Lower mon tor br ght	9 p n connector on rear of mon tor	Mon tor beze br ghtness Mon tor beze contrast Degauss ng sw tch on power entry pane
6638720A2	Upper mon tor br ght	9 p n connector on rear of mon tor	Mon tor beze br ghtness Mon tor beze contrast Degauss ng sw tch on power entry pane

Table 3 5 IIOIS40 Cable Connections (continued)

Cable Number	Cable Name	Connect From	Connect To
6638849A1	ADP s gna	P7 on MKM02 modu e	P8 on keyboard nterface board P2 on ADP pane
6639105A1	Reset cab e	Reset sw tch on power entry pane	P4 on MKM02 modu e P1 on DC d str but on board on ma n power supp y
6639106A1	Per phera power	F oppy dr ve	P5 on DC d str but on board on ma n power supp y
6634266A1	Mouse s gna	P10 on keyboard nterface board	Mouse port on ma r VAXstat on
6639446A1	Reset Y cab e	6639105A1 cab e	Reset so eno ds for ma n and aux ary VAXstat or
DEC cab e	RGB	CRT port on ma n VAXstat on	RGB on mon tor 1
DEC cab e	RGB	CRT port on aux ary VAXstat on	RGB on mon tor 2
DEC cab e	Keyboard	LK201 keyboard (eng neer ng)	Keyboard port on VAXstat on for upper mon tor of dua mon tors
DEC cab e	Keyboard	LK250 keyboard (operator)	Operator keyboard nterface board
Ethernet	Th nW re commun cat on	Ethernet Th nW re port on ma n VAXstat on	Ethernet cab e
NKTT01 2	Ethernet jumper	Ethernet Th nW re port on aux ary VAXstat on	Ethernet Th nW re port on ma n VAXstat on

AC Power

CAUTION	**Make sure that all labels on the power supply and the power entry panel are changed to show 240 VAC operation or equipment damage may result if the incorrect voltage is connected to the power supply. Make sure main power breaker is off before changing operating voltage setting or equipment damage may result.**
ATTENTION	**Assurez-vous que le disjoncteur de d'al'mentation principale est hors tension avant de modifier le reglage de la tension de service. Assurez-vous que toutes les etiquettes apposees sur le bloc d'alimentation et sur le panneau d'entree de l'alimentation ont ete modifiees pour correspondre au fonctionnment a 240 V c a.**

IIOIS40 AC power input connects to a terminal block on the bottom front of the power entry panel The IIOIS40 console can operate from 120 or 240 VAC, 50 or 60 hertz The power entry panel provides line filtering, transient suppression and a 20 amp circuit breaker

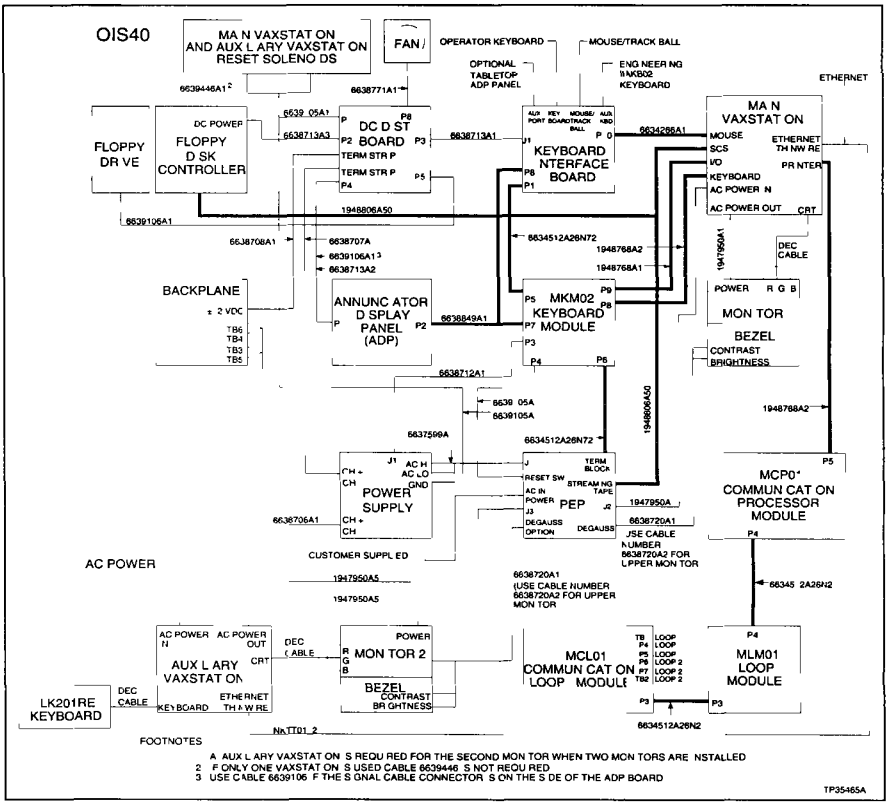


Figure 3 9 IIOIS40 Cable Connections

SETUP FOR 240 VAC

Setting up the IIOIS40 console for 240 VAC requires chang ing the jumper setting on the power supply The location of this jumper is on the power supply shown in Section 4 The Intecolor and Aydin brand color monitors are autosensing and need no changes for 240 VAC operation Monitors by other vendors may require changes The VAXstations are autosensing and need no changes for 240 VAC operation

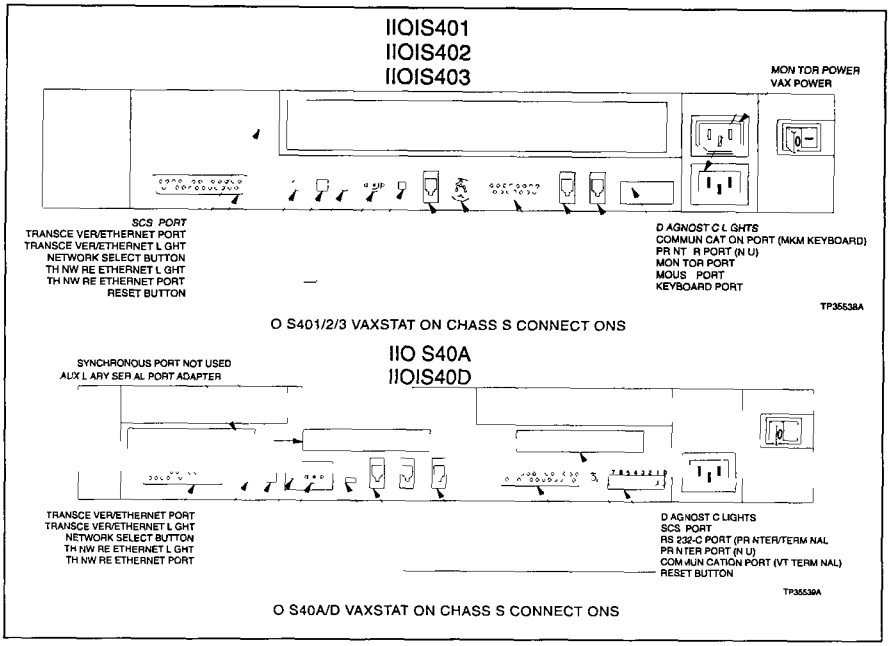


Figure 3 10 IIOIS40 and IIOIS40A/D VAXstation Chassis Connections

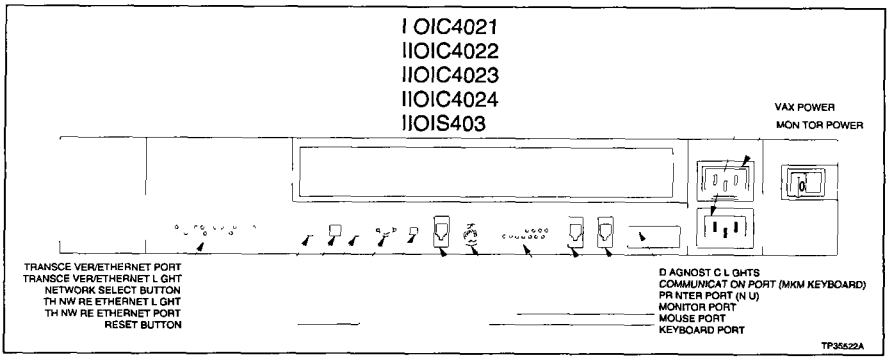


Figure 3 11 IIOIC4021/2/3/4 and IIOIS403 VAXstation Chassis Connections

AC OUTLETS

CAUTION	**Do not plug modules or peripherals such as a tape drive or printer into the OIS console with power applied. A current surge or voltage spike could damage sensitive components on the unit.**
ATTENTION	**Ne pas inserer les cartes ni les peripheriques tels que les derouleurs de bande et les imprimantes dans l'OIS lorsque ce dernier est sous tension. Les composantes de l'unite risquent d'etre endommagees par les pointes de courant ou de tension.**

There are four AC outlets on the IIOIS40 power entry panel Three are located on the rear for color monitors and the power supply The outlet on the front is for the streaming tape drive

There are three AC outlets on the IIOIS40A power entry panel Two are located on the rear for the power supply and an auxiliary device Each AC outlet is rated for a maximum of ten amps The circuit breaker for the entire OIS console is rated for a maximum of 20 amps

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

AC WIRING

The following steps outline the required procedure to install and power up the OIS or OIC console Observe and follow all related safety procedures when doing these steps

NOTE. Before removing a module from the multibus card cage or doing maintenance on equipment containing static sensitive devices read ***HARDWARE SETUP ELECTROSTATIC DISCHARGE CONTROL*** in this section

1 Turn off the breakers for the AC supply power and verify that no power is present to the OIS or OIC console when making wiring connections

2 Open the front door of the OIS or OIC cabinet. This provides access to the terminals needed for wiring to the INFI 90 communication highway and AC power

3 Vibration during shipping and handling may unseat modules and connections therefore causing problems Verify that modules are seated

4 Check the placement of modules in the multibus card cage Compare module placement to Figure 4 1 in Section 4 and check the switch settings on the boards shown in Section 4

5 Connect the Plant Loop or INFI NET communication link to the OIS multibus communication loop module. See Figure 3 12 for wiring connections.

NOTE: Set jumpers J1 to J6 for the type of cable used in the Plant Loop or INFI NET, either coax a or twinax al cable

6 Wire AC power to the terminals at the bottom front of the power entry panel See Figure 3 13 for AC input connections on the power entry panel.

NOTE. Verify that the incoming voltage meets the rating on the label of TB1 on the power entry panel

The recommended minimum size for power wiring is 14 AWG copper wire with a 600 volt, 75 degree Celsius 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

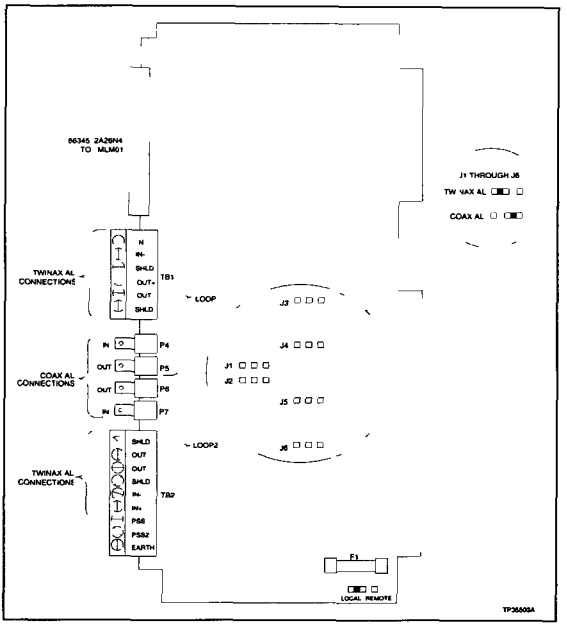


Figure 3 12 Multibus Communication Loop Module

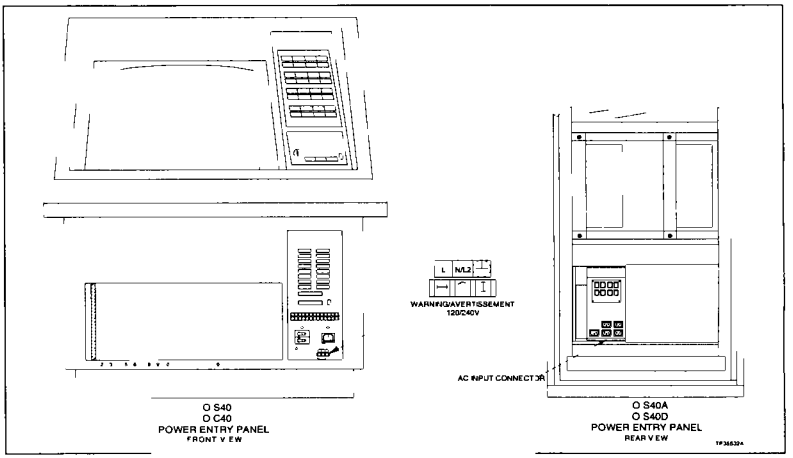


Figure 3 13 IIOIS40, IIOIC402 and IIOIS40A/D Power Entry Panel AC Input

The power wiring to the OIS or 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 OIS or OIC hardware Refer to Appendix A for the peak inrush current and duration for the OIS or OIC console

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

The power entry panel and cable connector panel is located in the front of the cabinet in the bottom right corner Connect only 120 or 240 VAC at 50 or 60 hertz into the terminal block below the circuit breaker on the power entry panel Refer to ***AC Power*** in this section and ***IIOIS401, IIOIS402 and IIOIS403, and IIOIC4021, IIOIC4022 and IIOIC4023 Power Entry Panel*** in Section 4 of this manual for more information

NOTE. f remote mon tors are be r g nsta ed n the O S or O C conso e be sure they are powered us ng the same power source and ground as the O S or O C console to reduce the chance of commun cat on prob ems on the Ethernet Fa ure to do so may cause data to be changed or ost

6 After completing the wiring, check these items

- Check that the OIS peripherals (keyboards, printers, etc) are connected to the correct port
- Check that unused Ethernet ports (streaming tape port) have terminator plugs in place.
- Check the AC voltage sources, apply power If problems occur, refer to the troubleshooting section of this manual

Refer to ***IIOIS401, IIOIS402 and IIOIS403, and IIOIC4021, IIOIC4022 and IIOIC4023 Power Entry Panel*** in Section 4 of this manual for internal power entry panel wiring connections

IIOIC401 SETUP AND PHYSICAL INSTALLATION

Follow local wiring codes when wiring and installing cable ways or conduit For more information, refer to the ***Site Planning and Preparation*** manual

WARNING	**Do not operate the OIC console with doors or covers opened or removed Touching connections that carry current and voltage may cause injury**
ATTENTION	**Ne faites pas fonctionner l'OIC si les portes ou les couvercles sont ouverts ou retires. Tout contact avec les connexions ou circule du courant ou de la tension risque de provoquer des blessures.**

IIOIC401 TABLETOP HARDWARE

The OIC tabletop hardware is located in a case The power supply and IIMKM02 Multibus Keyboard Module are in the case The monitor is mounted on top of the case (Figure 3 14)

NOTE F gure 3 14 s shown w th power removed

The rear connector panel has a connector for AC input, alarm contact outputs, monitor cables and a power switch The front panel has the connectors for peripheral devices and a tune/off/configuration keyswitch. Figure 3 15 shows the case dimensions

The VAXstation is located inside the table on a shelf Access the connections from the rear of the cabinet

IIOIC401 WIRING CONNECTIONS AND CABLING

The IIOIC401 console is internally wired when it is shipped Connect the AC power and any peripheral devices IIOIC401 AC power input connects to the power connector on the rear of the case The power entry panel provides line filtering, transient suppression and a ten amp circuit breaker

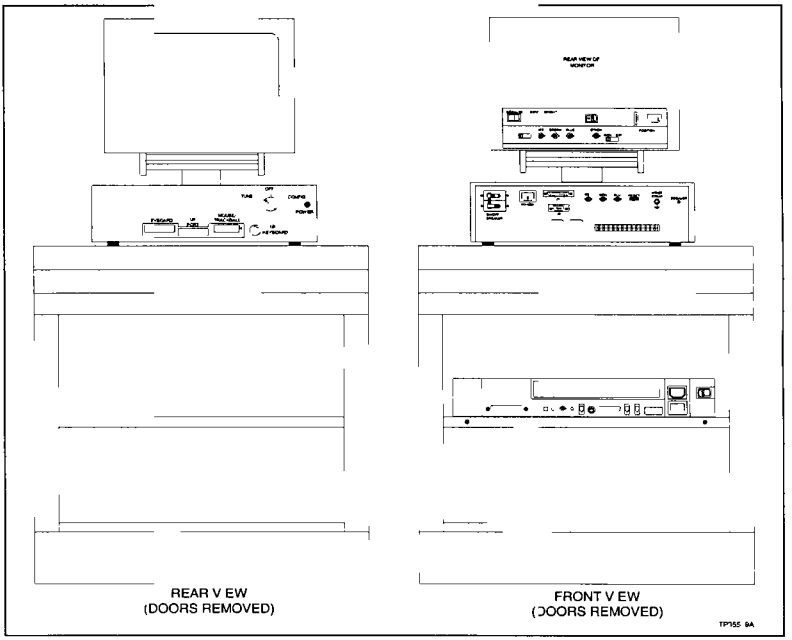


Figure 3 14 IIOIC401 Tabletop (19 Inch) Front and Rear Views

Table 3 6 contains the color codes for the wiring Table 3 7 contains a list of cables and their connections IIOIC401 cable connections are shown in Figure 3 16 The chassis connections for the IIOIC401 console are shown in Figure 3 17

IIOIC402 SETUP AND PHYSICAL INSTALLATION

The OIC and OIS console are similar, except the OIC console has no hard disks, floppy disks or network interface cards The cabinet size is the same. The installation is the same Figure 3 1 shows the IIOIC402 dimensions

NOTES

1 Extended door s on O C4023 conso e

2 Stud center to rear door s 17 96 cent meters (7 07 nches) for IO C4023 conso e

3 Refer to Sect on 4 for the ayout of the mu t bus card cage and a deta ed descr pt on of the power entry pane

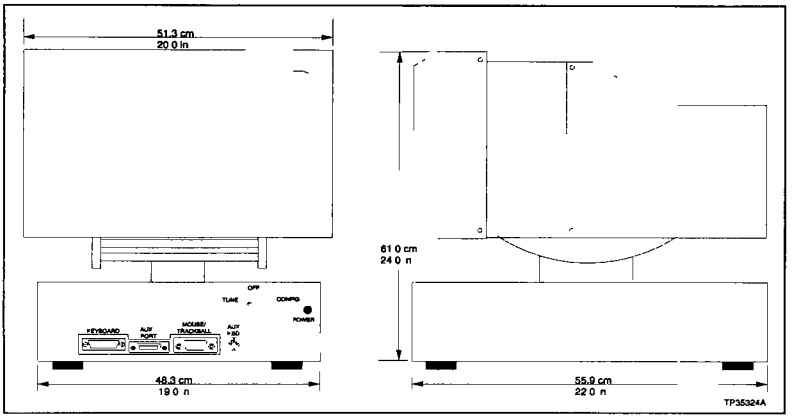


Figure 3 15 IIOIC401 Case Dimensions

Table 3 6. OIC Wiring Color Codes

Color	Function
Brown	AC hot
B ue	AC neutra
Green/Ye ow	AC common
Brown	+5 VDC
Wh te/Green	DC common
V o et	12 VDC
Wh te/V o et	+12 VDC
Green	Remote vo tage sense s gna w re
Wh te	+Remote vo tage sense s gna w re

IIOIC402 WIRING CONNECTIONS AND CABLING

The IIOIC402 console is internally wired when it is shipped Connect the AC power and any peripheral devices Refer to Section 4 for specific instructions on installing and configur ing peripheral devices and replacement components

Table 3 4 contains the color codes for the wiring Table 3 8 contains a list of cables and their connections Figure 3 18 shows the cable connections Refer to ***AC Power*** in this section for IIOIC402 AC information

Table 3 7 IIOIC401 Cable Connections

Cable No.	Cable Name	Connect From	Connect To
1948768 2	Keyboard	J2 on chass s	Keyboard port on VAXstat on
1948768 3	Commun cat on	J1 on chass s	I/O port on VAXstat on
6634512 26N15	ADP s gna	P6 on MKM02 modu e	Term na b ock on chass s
6634512 26N15	I/O d str but on	P5 on MKM02 modu e	P1 on keyboard nterface board
6634512 26N15	/O d str but on	P7 on I MKM02 modu e	P8 on keyboard nterface board
6638719 2	Reset cab e	P4 on I MKM02 modu e	Reset switch on power entry pane
6638720 1	Mon tor beze contro s	Degauss on chass s	Br ghtness on beze Contrast on beze Mon tor
6639637 1	Keyboard signal	P8 on IIMKM02 module	J2 on chass s (ins de)
6639211 1	Power	TB1 on power supp y	P16 on I MKM02 modu e Coo ng fan P2 on keyboard nterface board
6639212 1	AC power	Power n on chass s	AC N on chass s AC H on ma n power supp y AC LO on ma n power supp y Ground on ma n power supp y
6639213 1	PF sense	P3 on I MKM02 modu e	J2 on power supp y
6639266 1	Mouse	J3 on chass s	Mouse port on VAXstat on
6639117 1	I/O s gna	P9 on I MKM02 modu e	J1 on chass s (ns de)
6639637 1	Keyboard data	P10 on keyboard nterface board	J3 on chass s (ns de)
DEC cab e	Power	AC out on VAXstat on	Power n on chass s
DEC cab e	RGB	Mon tor port on VAXstat on	RGB on mon tor
Ethernet	Th nW re commun cat on	Ethernet port on VAXstat on	Ethernet Th nW re on I O S40 VAXstat on

IIOIC403 SETUP AND PHYSICAL INSTALLATION

Before the OIC console is set into place, insure that the floor is level in the area where the cabinet will be set The unit must be secured to the floor before it is wired or operated Figure 3 19 shows the cabinet dimensions The dimensions for the mounting screws are shown in Figure 3 20

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*** manual for more information

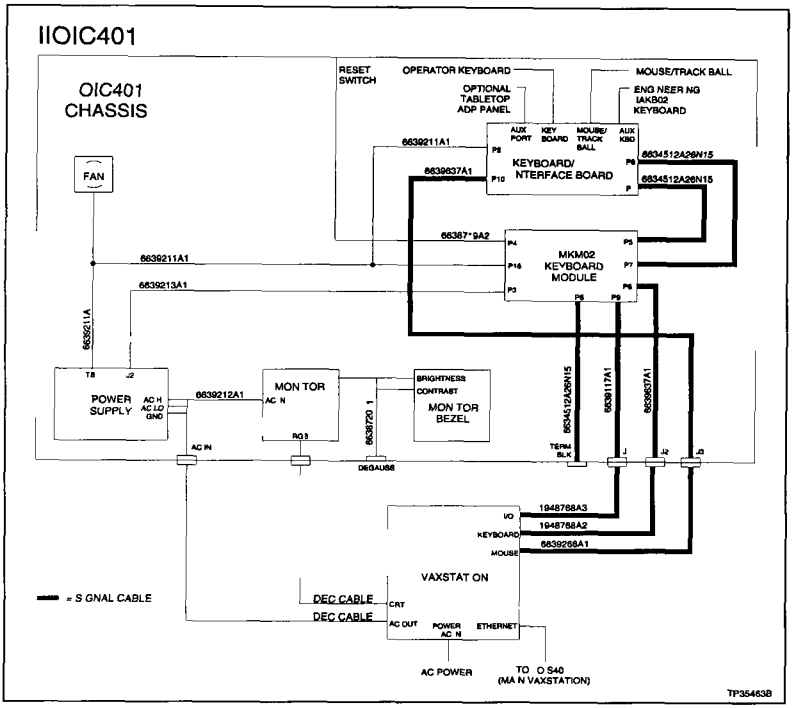


Figure 3 15 IIOIC401 Cable Connections

OIC ENVIRONMENTAL CABINET COMPONENT LOCATIONS

Figure 3 21 shows the front view of the OIC environmental cabinet This figure shows the location of the hardware in this unit The power entry panel has a connector for AC input and alarm contact outputs (24 VDC) and cable connectors for peripheral devices The alarm contact relay outputs are for alarm annunciation only

IIOIC403 WIRING CONNECTIONS AND CABLING

The IIOIC403 console is internally wired when it is shipped Connect the AC power and any peripheral devices. IIOIC403 AC power input connects to the power connector on the rear of the case The power entry panel provides line filtering, transient suppression and a 20 amp circuit breaker

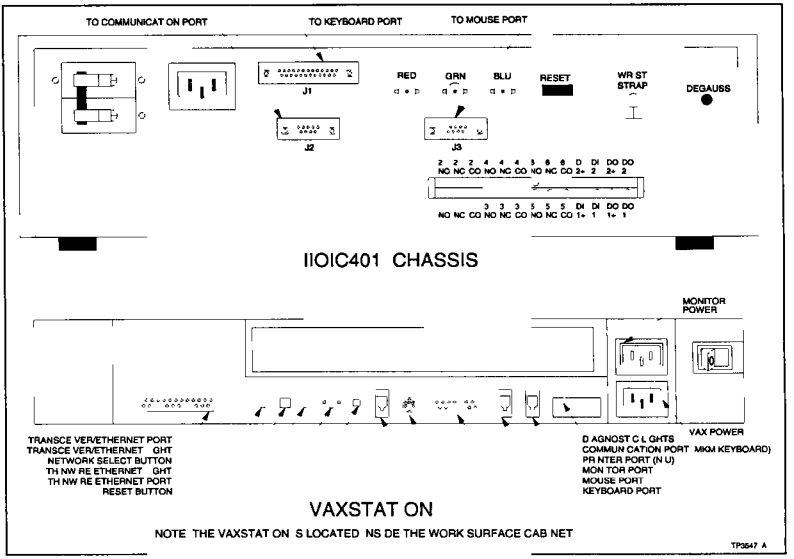


Figure 3 17 IIOIC401 Chassis Connections

Table 3 8 IIOIC402 Cable Connections

Cable Number	Cable Name	Connect From	Connect To
1947950A1	AC power	J1 on power entry pane	AC power n on VAXstat on 1
DEC cab e	AC power	AC power out on VAXstat on 1	AC power connector on mon tor 1
1947950A5	AC power	J2 on power entry pane	AC power n on VAXstat on 2
1947950A5	AC power	AC power out on VAXstat on 2	AC power connector on mon tor 2
1948768A2	Keyboard s gna	P8 on I MKM02 modu e	Keyboard port on VAXstat on 1
1948768A1	/O s gna	P9 on I MKM02 modu e	/O port on VAXstat on 1
6634512A26N72	/O d str but on	P5 on IMKM02 modu e	P1 on keyboard interface board
6634512A26\72	I/O d str but on	P6 on MKM02 modu e	Rear of term na b ock on power entry panel
6637599A1	AC power	J1 on power entry pane	AC H on ma n power supp y AC LO on ma n power supp y Ground on ma n power supp y
6637776A2	Wr st ground	User	Wr st connector on power entry pane

Table 3 8 IIOIC402 Cable Connections (continued)

Cable Number	Cable Name	Connect From	Connect To
6638706A1	Power	Channe ± on power supp y	TB3, TB4 TB5 and TB6 on backp ane
6638707A1	DC power	Channe ± on power supp y	Term na b ock on DC d str but on board
6638708A1	DC power	TB2 on backp ane	Term na b ock on DC d str but on board
6638709A1	PF se~se	J1 o~ powe~ supp y	P3 o~ I VKV02 ~odu e
6638713A1	Per phera power	P2 on keyboard nterface board	P3 on DC d str but on board on ma n power supp y
6638713A2 or 6639106	Per phera power	P1 on ADP board contro er	P4 on DC d str but on board on ma n power supp y
6639105A1	Reset cab e	Reset sw tch on power entry pane	P1 on DC d str but on board on VAXstat on reset so eno d
6638720A1	Lower mon tor br ght	9 p n connector on rear of mon tor	Mon tor beze br gh ness Mon tor beze contrast Degauss ng sw tch on power entry pane
6638720A2	Upper mon tor br ght	9 p n connector on rear of mon tor	Mon tor beze br gh ness Mon tor beze contrast Degauss ng sw tch on power entry pane
6638849A1	ADP s gna	P7 on IMKM02 modu e	P8 on keyboard nterface board P2 on ADP pane
6639266A1	Mouse s gna	P10 on keyboard nterface board	Mouse port on VAXstat on 1
6639446A1	Reset Y cab e	6639105A1 cab e	Reset so eno ds for VAXstat ons 2
DEC cab e	RGB cab e	CRT port on VAXstat on 1	RGB on mon tor 1
DEC cab e	RGB cab e	CRT port on VAXstat on 2	RGB on mon tor 2
DEC cab e	Keyboard cab e	LK250 keyboard	Keyboard port on VAXstat on for mon tor 2 of dua mon tors
DEC cab e	Keyboard cab e	LK250 keyboard	Operator keyboard nterface board
NKTT01 3	Ethernet jumper	Ethernet Th nW re port on VAXstat on 1	Ethernet Th nW re port on VAXstat on 2
Ethernet	Th nW re commun cat on	Ethernet Th nW re port on VAXstat on 1	Ethernet Th nW re port on IOIS40 VAXstat on

Table 3 4 contains the color codes for the wiring Table 3 9 contains a list of cables and their connections IIOIC403 cable connections are shown in Figure 3 22 Figure 3 23 shows the VAXstation chassis connections Figure 3 24 shows the power entry panel connections.

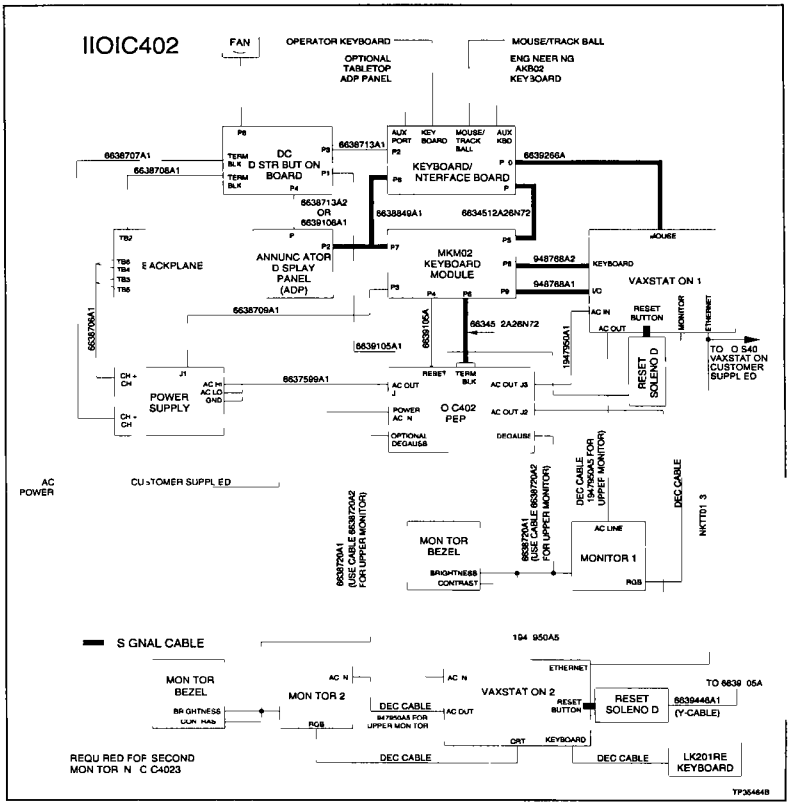


Figure 3 18 IIOIC402 Cable Connections

IIOIC404 SETUP AND PHYSICAL INSTALLATION

Before the OIC console is set into place, insure that the supporting panel is strong enough to support the monitor Follow local wiring codes when wiring and installing cableways or conduit For more information, refer to the ***Site Planning and Preparation*** manual Figure 3 25 shows the monitor and keyboard interface panel cut out dimensions

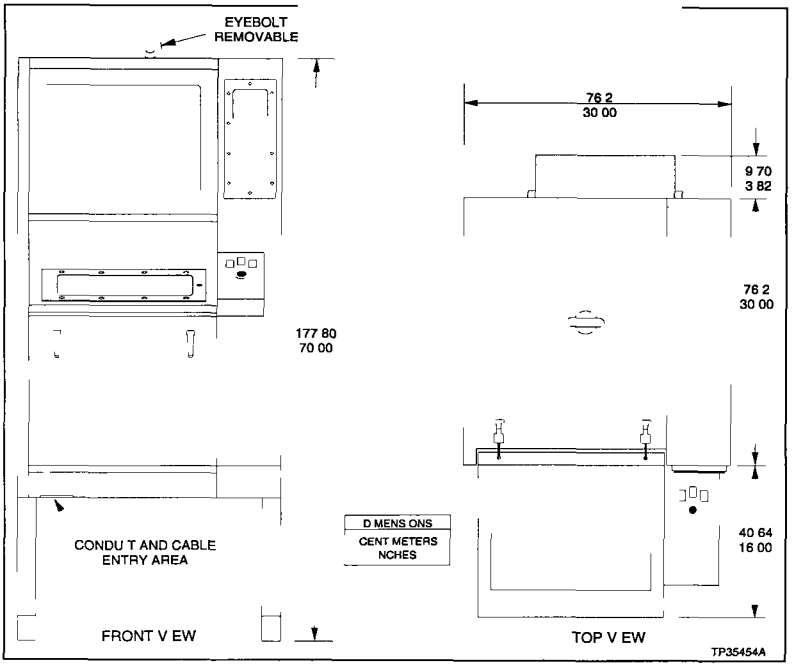


Figure 3 19 IIOIC403 Cabinet Dimensions

OIC PANEL MOUNTED COMPONENT LOCATIONS

Figure 3 26 shows the rear view of the OIC console This figure shows the location of the hardware in this unit

The back of the power entry panel has a connector for AC input, alarm contact outputs (24 VDC) and the monitor ca bles The operator keyboard interface panel is mounted on a separate panel It has the connectors for operator devices such as keyboard, trackball or mouse, and a tune/off/con figuration keyswitch The alarm contact relay outputs are for alarm annunciation only

IIOIC404 WIRING CONNECTIONS AND CABLING

The IIOIC404 console is internally wired when it is shipped. Connect the AC power and any peripheral devices IIOIC404 AC power input connects to the power connector on the rear

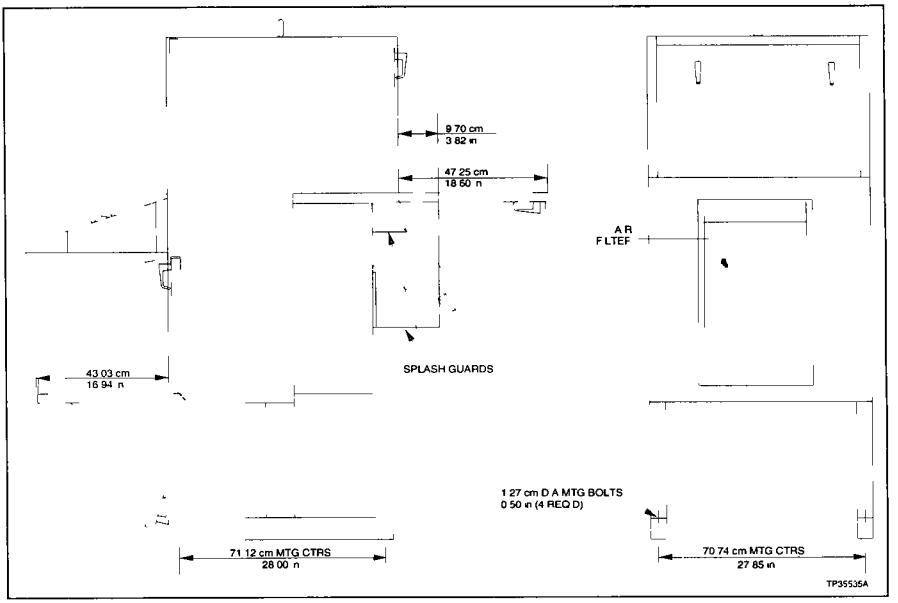


Figure 3 20 IIOIC403 Anchoring Dimensions

of the case The power entry panel provides line filtering, transient suppression and a ten amp circuit breaker

Table 3 4 contains the color codes for the wiring Table 3 10 contains a list of cables and their connections IIOIC404 cable connections are shown in Figure 3 27 The chassis connections for the IIOIC404 console are shown in Figure 3 28

PERIPHERAL CONNECTIONS

This section describes connecting the printer and streaming tape drive to the IIOIS40 and IIOIC402 consoles It also shows the peripheral port locations on the IIOIS401, IIOIS402 and IIOIS403, IIOIC4021, IIOIC4022 and IIOIC4023, and the IIOIS40A and IIOIS40D consoles

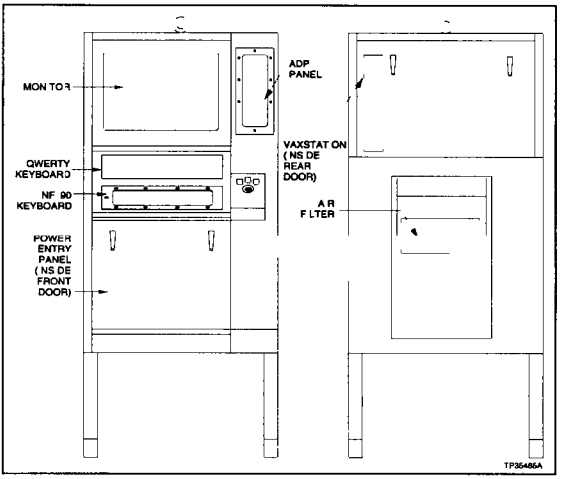


Figure 3 21 IIOIC403 Environmental Cabinet Front and Rear Views

Table 3 9 IIOIC403 Cable Connections

Cable Number	Cable Name	Connect From	Connect To
1948768A1	Commun cat on	P9 on MKM02 modu e	I/O port on VAXstat on
1948768A2	Keyboard	P8 on MKM02 modu e	Keyboard port on VAXstat on
1947950A5	Power	J2 on power entry pane	AC n on mon tor
6634512A26N15	/O d str but on	P5 on MKM02 modu e	P1 on keyboard nterface board
6638713A1	Power	P1 on DC d str but on board	P16 on IMKM02 modu e
6638713A1	Power	P3 on DC d str but on board	P2 on keyboard nterface board
6638713A4	Power	P4 on DC d str but on board	P1 ADP board
6638719A1	Reset cab e	P4 on IIMKM02 modu e	Reset switch on power entry pane
6638720A3	Mon tor bezel contro s	Br ghtness on power entry pane Contrast on power entry pane Degauss on power entry pane	Br ghtness on beze Contrast on beze Mon tor
6638849A1	ADP s gna	P7 on IIMKM02 modu e	P2 on ADP board P8 on keyboard nterface board
6639212A2	Power	J1 on power entry pane	AC H on ma n power supp y AC LO on ma n power supp y Ground on ma n power supp y

Table 3 9. IIOIC403 Cable Connections (continued)

Cable Number	Cable Name	Connect From	Connect To
6639213A1	PFI sense	P3 on IIMKM02 modu e	J2 on power supp y
6639513A1	Power	Term na b ock on DC d str but on board	TB1 on power supp y
Customer	Conso e power	Power source	AC in on power entry pane
DEC cab e	Power	AC power n on VAXstat on	AC power out power entry pane
DEC cab e	RGB	Mon tor port on VAXstat on	RGB on mon tor
Ethernet	Th nW re commun cat on	Ethernet Th nW re port on VAXstat on	E thernet Th nW re port on IOIS40 VAXstat on
Vendor	AC power	AC out on power entry pane	A r cond t oner
Vendor	Joyst ck	Joyst ck	Mouse port on VAXstat on
Vendor	Keyboard	Keyboard	Keyboard on keyboard nterface board

CAUTION	**Never install or remove any peripherals with the power on or damage to the equipment may result. Ensure that all peripheral equipment and the main CPU are powered off.**
ATTENTION	**N'installez ou ne retirez jamais de peripheriques lorsque l'equipment est sous tension afin d'eviter tout dommage materiel. Assurez-vous que tous les peripheriques et l'unite centrale sont hors tension.**

NOTE Use a 50 ohm term nator or both s des of the Ethernet T connector f the Ethernet network s not used

Peripheral information is in Section 4 Ethernet information is in this section

Printer Installation

Local printers can connect to the printer ports on auxiliary OIC VAXstations or to the terminal server Shared printers must connect to the terminal server Postscript printers (required for the print screen function) must connect to the terminal server

OIS software supports the VAXstation model 3100 or VAXser ver model 3100 The VAXserver and VAXstation model 3100 have telephone style (Telco) communication ports. A DB25 to Telco adapter is required to connect the Telco cable from the printer to any of the VAXserver ports A null modem cable connects the printer to any of the VAXserver ports Refer to

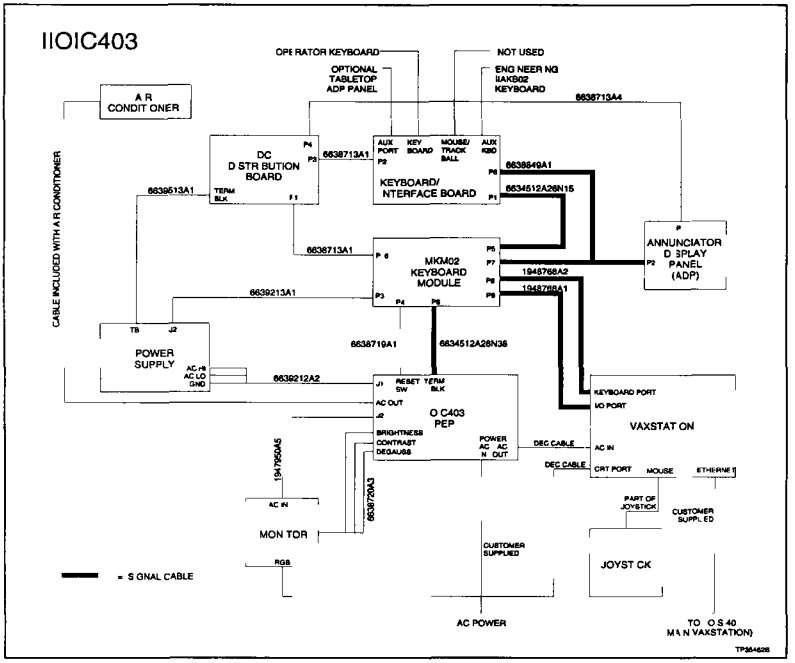


Figure 3 22. IIOIC403 Cable Connections

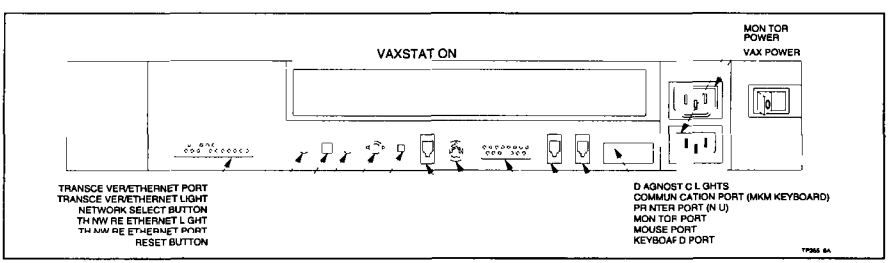


Figure 3 23 IIOIC403 VAXstation Chassis Connections

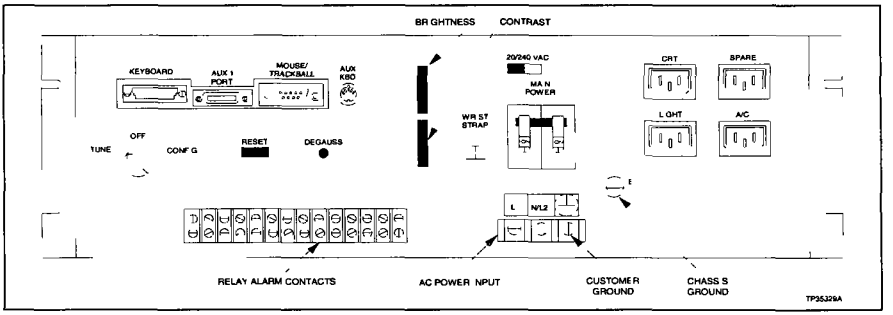


Figure 3 24. IIOIC403 Power Entry Panel

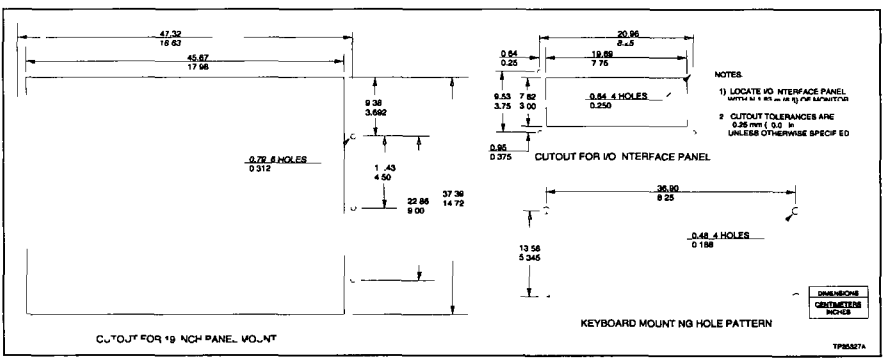


Figure 3 25 IIOIC404 Mounting Dimensions

the OIC model in this section that the printer is connected to for location of the printer port Refer to Figure 3 29 for the printer cable connection

The DEFINE DEVICES command sequence must be completed for the software to recognize a printer Refer to ***SOFTWARE INSTALLATION*** in this section

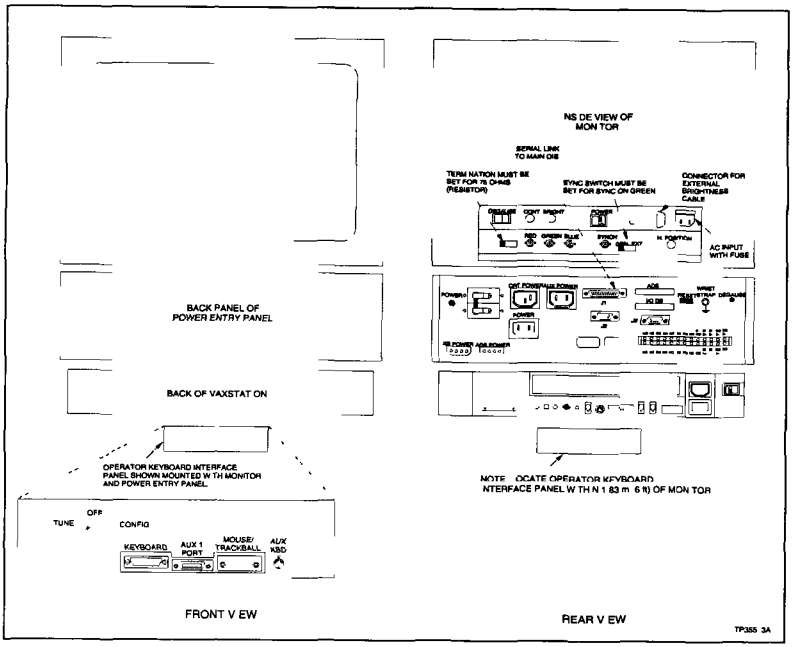


Figure 3 26 IIOIC404 Panel Mounted Model Front and Rear Views

Table 3 10 IIOIC404 Cable Connections

Cable No	Cab e Name	Connect From	Connect To
19448768A2	Keyboard	J2 on chass s	Keyboard port on VAXstat on
1948768A3	Commun cat on	J1 on chass s	I/O port on VAXstat on
6634512A26N15	ADP s gna	P6 on IMKM02 modu e	Term nal b ock on chass s
6634512A26N72	I/O d str but on	I/O DB connector on chass s	P1 on keyboard nterface board
6634512A26N72	/O d str but on on ch ass s	ADP connector	P8 on keyboard nterface board
6638719A1	Reset cab e	P4 on IMKM02 modu e	Reset sw tch on power entry pane
6638720A1	Mon tor beze contro s	Degauss on chass s	Br ghtens on beze Contrast on beze Monitor
6639637A1	Keyboard s gna	P8 on IMKM02 modu e	J2 on chass s (ns de)

Table 3 10 IIOIC404 Cable Connections (continued)

Cable No.	Cable Name	Connect From	Connect To
6637399A1	/O d str but on	P5 on MKM02 modu e	/O DC connector on chass s (ns de)
6637399A1	I/O d strıbut on	P7 on I MKM02 modu e	ADS connector on chass s (ns de)
6639211A1	Power	TB1 on power supp y	P16 on I MKM02 modu e C>o ng fan P2 on keyboard ınterface board
66392'2A1	AC powe-	Powe- - o- c-ass s	AC I\ o- c-ass s AC HI on ma n power supp y AC LO on ma n power supp y Ground on ma n power supp y
6639213A1	PFI sense	P3 on MKM02 modu e	J2 on power supp y
6639266A2	Mouse	J3 on chass s	Mouse port on VAXstat on
6639117A1	I/O s gna	P9 on MKM02 modu e	J1 on chass s (ns de)
6639637A1	Keyboard data	P10 on keyboard nterface board	J3 on chass s (ns de)
DEC cab e	Power	AC out on VAXstat on	Power n on chass s
DEC cab e	RGB	Mon tor port on VAXstat on	RGB on mon tor
Ethernet	Th nW re commun cat on	Ethernet port on VAXstat on	Ethernet Th nW re on I O S40 VAXstat on

Streaming Tape Drive Installation

CAUTION	**Never install the tape drive to the VAXstation with the VAXstation or tape drive power on. Failure to do so may result in damage to both the VAXstation busses and the tape drive.**
ATTENTION	**Ne branches jamais le derouleur de bande au VAXstation lorsque l'un ou l'autre de ces appreils est sous tension. Sinon, les bus du VAXstation et le derouleur pourrait etre endommages.**

To install a streaming tape drive follow these steps

1 Ensure that the power to both the tape drive and VAXstation is OFF

2 Install the tape drive cable into the SCSI peripheral port (located in the IIOS40A cabinet) or the streaming tape port (located on the IIOIS401, IIOIS402 and IIOIS403 power entry panel) These ports are internally connected to the VAXstation CPU

3. Apply power to the tape drive

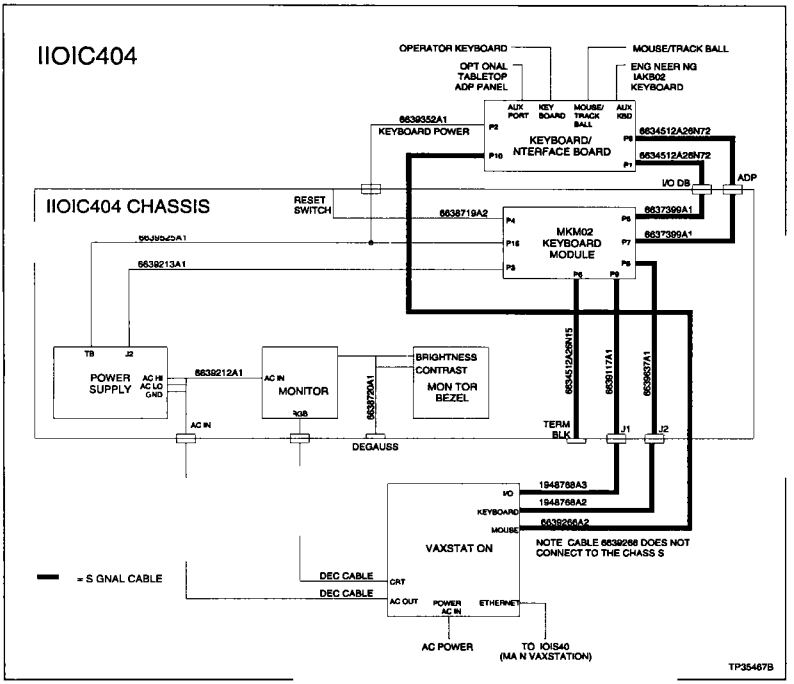


Figure 3 27 IIOIC404 Cable Connections

4 Verify that the green LED is ON and that the red button is OFF

5 Apply power to the VAXstation

Figure 3 30 shows the peripheral port locations on the IIOIS401, IIOIS402 and IIOIS403, IIOIC4021, IIOIC4022 and IIOIC4023, and the IIOIS40A and IIOIS40D consoles

ETHERNET CONFIGURATIONS

Follow these Ethernet configuration rules closely to correctly set up the network.

- The maximum length of both ThinWire and thickwire seg ments depend on the hardware connected to the segments

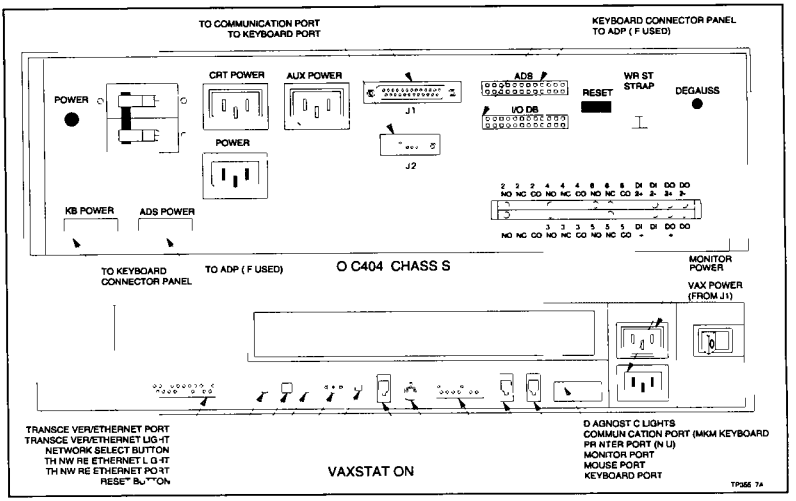


Figure 3 28 IIOIC404 Chassis Connections

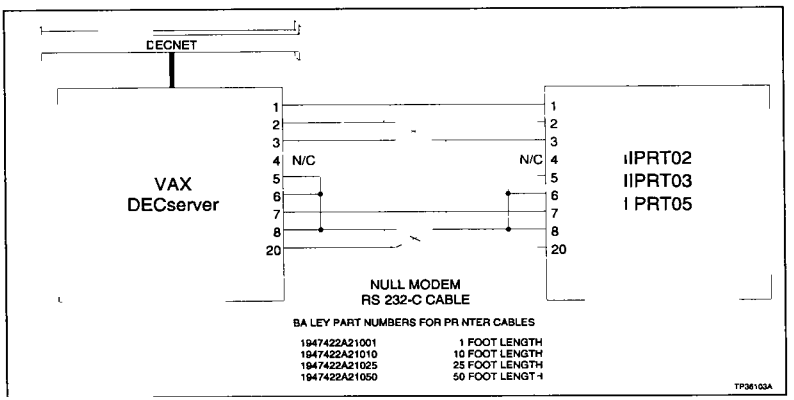


Figure 3 29 Printer Cable Connections

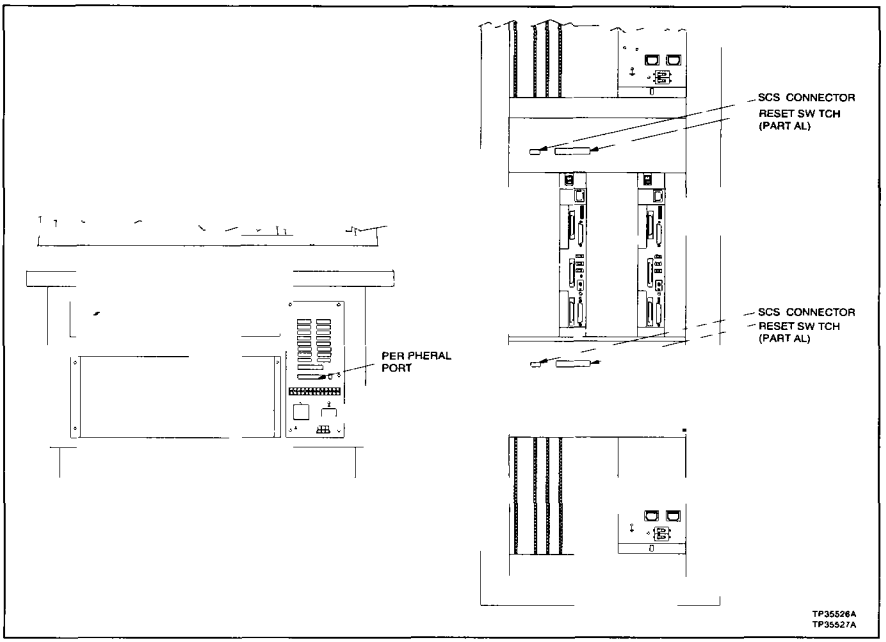


Figure 3 30 Streaming Tape Drive Cable Connections

- An Ethernet message can pass through no more than two repeaters before it reaches its destination or passes through a network bridge
- Ethernet requires a terminator at each end of the cable
- ThinWire requires that the LED next to the BNC connector be on If it is not on, toggle the select button

The figures in this section are guidelines Each network may require changes due to hardware or application

NOTE: Be caref_ _s ng hardware from more than one manufacturer Sim lar parts can have d fferent specif cat ons that can l m t performance

Standard IIOIS40 Ethernet Configurations

Figures 3 31 through 3 34 show standard Ethernet connec tions for the OIS console Figure 3 32 shows the connections for a stand alone (not connected to a plant wide Ethernet network) OIS console Figure 3 33 shows standard Ethernet ThinWire configuration Figure 3 34 shows how OIS con soles connect to a plant wide thickwire network Figure 3 35 shows how OIS consoles connect to a ThinWire network The maximum total length of the console ThinWire and plant wide ThinWire is 185 meters (607 feet)

Alternative Connections to Plant Wide Networks

In general, use network bridges to connect one network with another Although a repeater can be used, a bridge provides better performance and security because it can be pro grammed to pass all or some of the message signals A repeater will pass all of the message signals

The direct barrel connection is another type of connection Direct barrel connections between ThinWire and thickwire are not permitted Note that direct transceiver to transceiver connections are not permitted Figure 3 36 shows connec tions to a plant wide thickwire network

Alternative Console Connections (Thickwire)

Although ThinWire is usually used, thickwire can be used to connect various pieces of an OIS system Figure 3 37 shows an example of a thickwire network Figure 3 38 shows con nections to a plant wide thickwire network.

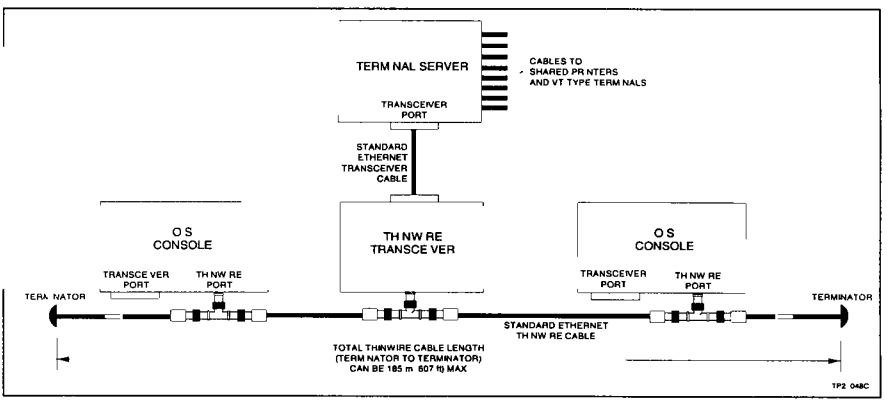


Figure 3 31 Standard Ethernet ThinWire Configuration for Stand Alone OIS Console

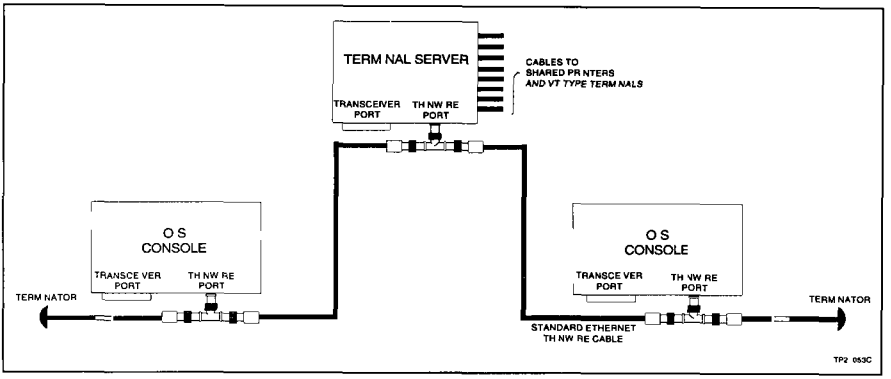


Figure 3 32 Alternative Ethernet ThinWire Configuration for Stand Alone OIS Console

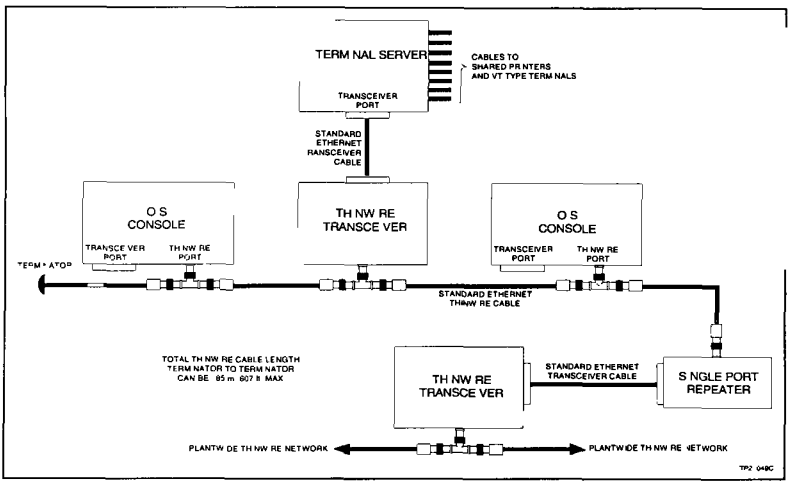


Figure 3 33 Standard Ethernet ThinWire Configuration for OIS Connected to Plant Wide ThinWire Network

Concentrator Configuration

A concentrator replaces a thickwire segment and several (the exact number depends on manufacturer and model) transceivers with a single box. This box allows several devices

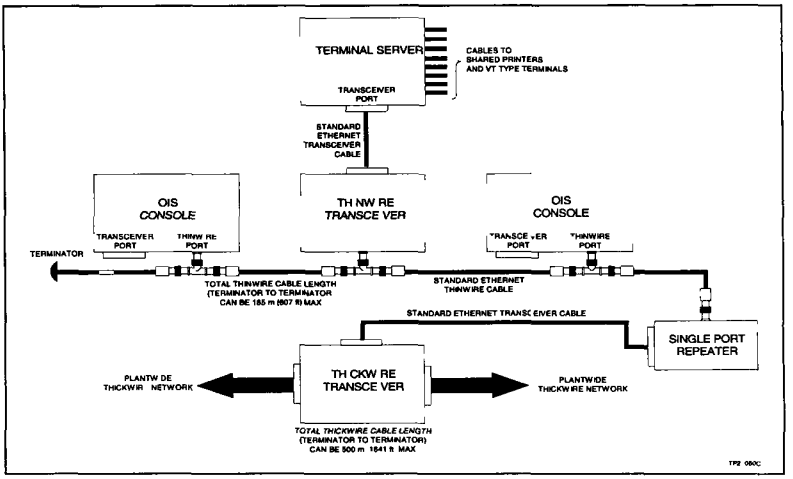


Figure 3 34 Standard Ethernet ThinWire Configuration for OIS Connected to Plant Wide Thickwire Network

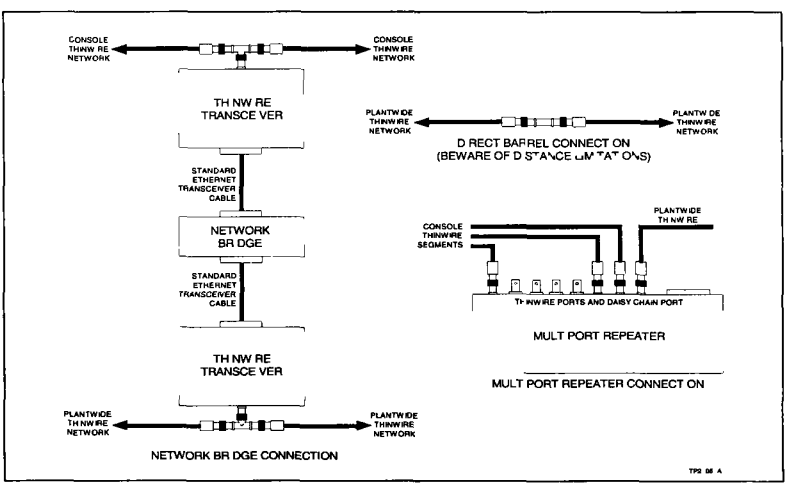


Figure 3 35 Alternative Console ThinWire Connected to a Plant Wide ThinWire Network

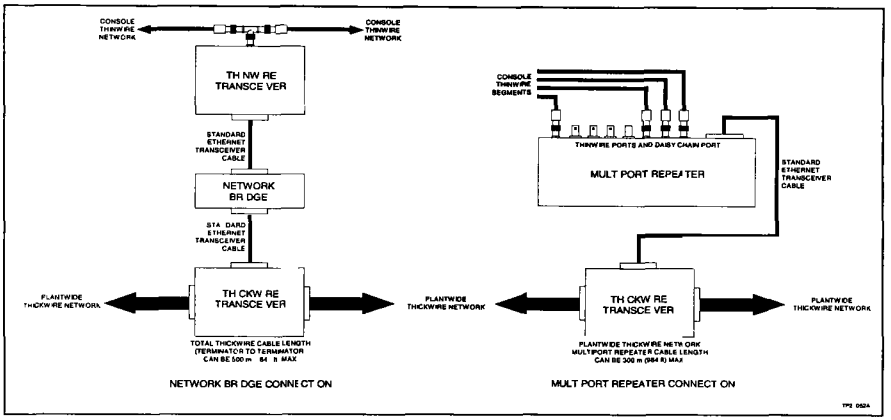


Figure 3 36 Alternative Cc nsole ThinWire Connected to Plant Wide Thickwire Network

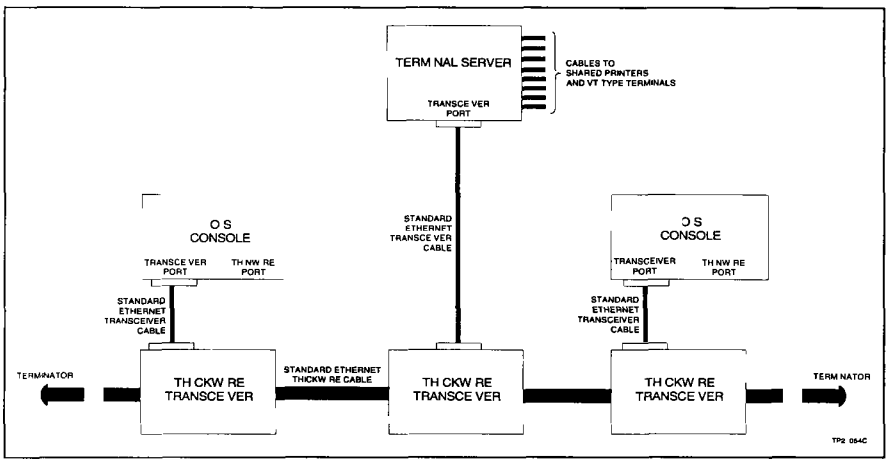


Figure 3 37 Alternative Ethernet Thickwire Configuration for OIS Console

(IIOIS40 consoles, terminal servers, etc) to connect to the plant wide network through only one device as opposed to multiple transceivers and cable segments See Figure 3 39 for an example.

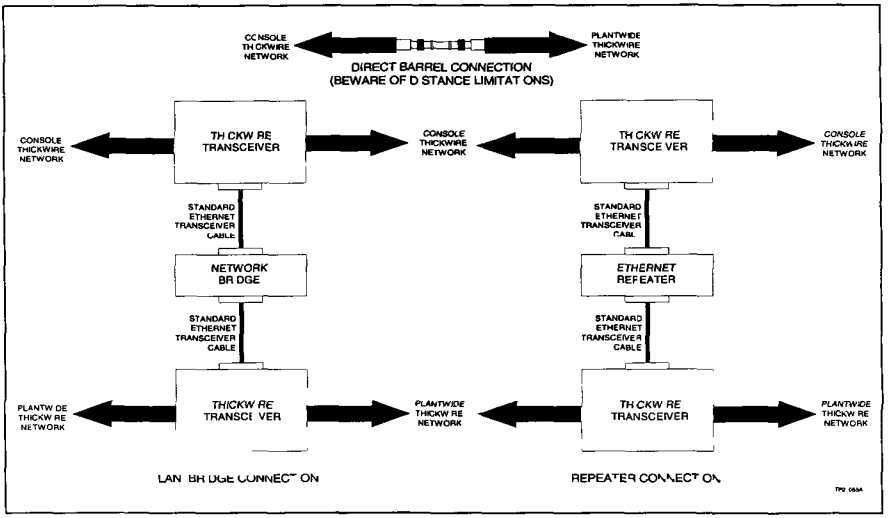


Figure 3 38 Alternative Console Thickwire Connection to Plant Wide Thickwire Network

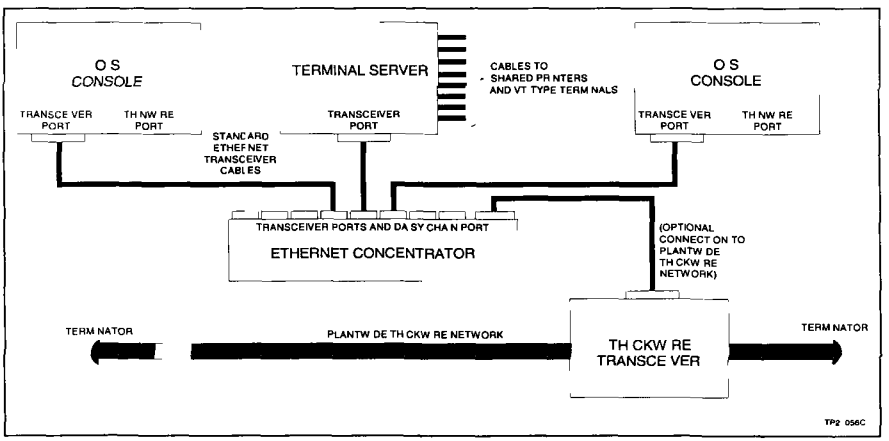


Figure 3 39 Alternative Concentrator Configuration for OIS Console

PREOPERATING ADJUSTMENTS

Each OIS or OIC console is powered up and tested before shipment All necessary power supply adjustments, monitor alignments, and jumper connections have been made Install the OIS or OIC console by following the instructions in this section:

- Set it into place according to the ***Site Planning and Preparation*** manual
- Connect the communication loop connections (OIS console only)
- Connect the OIC console to the OIS console (OIC console only).
- Check connections.
- Check power supply voltages.
- Check indicators.
- Check system configuration
- Check that doors are in place and locked
- Ethernet requires a terminator at each end of the cable
- Connect the incoming AC and hardware ground

SOFTWARE INSTALLATION AND STARTUP

This section contains the steps to install the software and to configure, start up, and shut down the OIS console It also explains how to back up the hard disks. Refer to the ***Operator Interface Station (IIOIS40) Operation/Configuration Manual*** for complete operating and configuring information

Install the current version of the software on a new OIS console or as an upgrade to an existing one

The OIS console uses two hard disk drives (identified as DKA200 and DKA300) The VMS operating system and its files use drive DKA200 The IIOIS40 application (console code) and its files use the DKA300 drive Installing software involves loading both disk drives from the TK50 streaming tape drive using software tapes Verify the firmware with Table 3 11.

After the firmware is verified, load the software and configure the OIS console (The OIS software runs on VMS version 5.5 only) There are several ways to configure an OIS console after loading the software.

- Create a new configuration on the IIOIS40 console

Table 3 11. Firmware Requirements for Release E 1

Module Type	ROM Type	ID No.	Part No	Revision	Source	Sum
I MKM01	27256	XU4	1900212B11	B 1	Ba ley	6C2E
MKM02	27256	XU4	1900271A20 1900271A13	A 2 A 3	Ba ey Ba ey	AA64 63DE
Keyboard scanner	68701	XU1	1900211A10	A 1	Ba ley	3D3A
I MCL01	N/A		—			
MLM01	27512	U2	1900165E11	E 1	Ba ey	8350
MCP01 (P ant Loop)	27C1024 27C1024	U23 U24	1900208B10 1900208B20	B 1 B 1	Ba ey Ba ey	4C4F D5CE
MCP01 (NF NET)	27C2048 27C2048	U23 U24	1900207D10 1900207D20	D 1 D 1	Ba ey Ba ey	6570 10BB
MCP02	27960 27960 27960 27960	U4 U3 U2 U1	1900252B10 1900252B20 1900252B30 1900252A40	B 0 B 0 B 0 A 0	Ba ey Ba ey Ba ey Ba ey	2CEB EAE2 DDFC 36C7

- Create a new configuration, or modify an existing one, using SLDG 4 1 (or later) on the engineering work station (EWS)
- Save or restore a configuration from an existing OIS console

OIS Console Power Up

To install the IIOIS40 software, the unit must be correctly powered up To do this

NOTE If an IIO S40A conso e (VAXserver 3100 mode 10e) s used connect a DEC VT™ ser es term na (or compat b e) to the commun ca t on port on the rear of the VAXserver See F gure 3 10 or 3 11 for the port oca t on

1 Energize the monitor

2 Energize the tape drive

3 Energize the main OIS VAXstation

4 Wait for the diagnostics to stop

5 Press the reset button on the back of the VAXserver if an IIOIS40A cabinet is being powered up

6 Press the reset rocker switch (located on the OIS power entry panel) to FULL if an OIS or OIC console is being powered up

TM DEC VT is a trademark of Digital Equipment Corporation

7 The OIS console should display a VMS self test message followed by the >>> prompt If this prompt does not appear, a hardware problem exists. Refer to Section 5.

OIS Console Directory Structure

The OIS application software (console code) is in these VMS directories. [OIS] and [DATA]. The [OIS] directory contains the executable code, libraries and system configuration, which consists of the LIB, EXE and CONFIG files. The [DATA] directory all OIS data files, which consist of USN and MSG files. See Figure 3 40 for the OIS directory structure.

OIS Console Start-Up

There are two ways to start up and shut down an OIS console. Run a command procedure from the $ prompt of a terminal window, or use the session manager pull down menus from either the OIS or OIC console Follow the procedures in ***OIS Console Startup and Shutdown*** in this section to use the pull down menus This section also describes how to run a command procedure to start up an OIS console

Inside the VMS operating system, log on to a specific account The OIS console has two user access accounts to use the system SYSTEM and OISENGR The OISENGR account allows access to configuration and system build data in addition to start up and shut down The SYSTEM account allows access to the area that defines the system for all procedures that require this level of access Note that only people that require this level of access for system configuration and maintenance should access the SYSTEM account This is a very powerful account and should be used with caution

On auxiliary terminals, a single account has been defined for access Refer to ***Opening a Terminal Window*** for more information

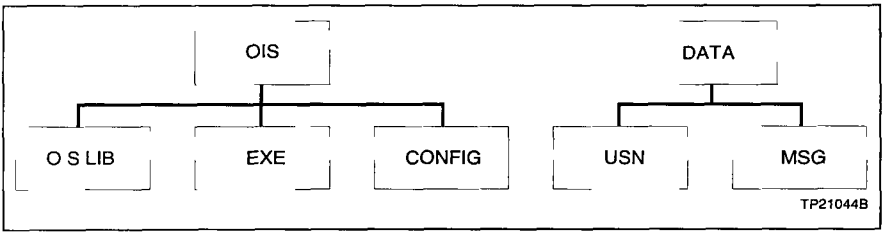


Figure 3 40. IIOIS40 Directory Structure

As shipped, passwords for the OISENGR and OIS accounts are the same as the account names. The password for the SYSTEM account is BAILEYCONTROLS All passwords may be changed by the system manager

SOFTWARE INSTALLATION

This section explains how to install the software for the OIS console and OIC console Read and understand these steps before operating the OIS console. For more software informa tion read the ***Operator Interface Station (IIOIS40) Operation/Configuration Manual***

These hardware terms appear on the display during software installation. DKB400, DKA200, DKA300, and MKB500 These terms relate to VAXstation 3100 model 10e

Table 3 12 lists the hardware terms Table 3 13 lists the software tapes Refer to Table 8 1 in Section 8 for part numbers

Table 3 12 Hardware Terms

Term	Description	Model
DKB400	3 5 inch floppy disk drive	38/10e
DKA200	Hard disk drive 1	38/10e
DKA300	Hard disk drive 2	38/10e
MKB500	Magnetic tape drive	38/10e

Table 3 13 Software Release E 1 Tapes

Tape	Description
STABCK	Stand alone backup
OPRDSK	Operating system tape number 1
OPRD02	Operating system tape number 2
OISDSK	OIS application tape for 10 000 and 30 000 tags

Software Installation Procedure

NOTE: If the existing configuration is saved using the **SAVECONFIG** command convert the software release C 2 files to software release E 1 files *before operating the OIS console Refer to Step 23 in this* procedure

To load the software into the OIS console, follow this procedure

1 Ready the system.

a Plug in the streaming tape and turn it on before powering up the system.

b Wait for diagnostics to finish before loading the software

2 To return to the >>> system prompt, press reset on the back of the VAXserver if an IIOIS40A cabinet is being used

3 Press reset rocker switch (located on the OIS power entry panel) in the direction labeled FULL if an IIOIS402 console is being used.

4 If the operating system disk has been replaced, proceed to Step 5 to boot stand alone backup from magnet c tape Otherwise boot stand alone backup from the hard disk by typing·

B/E0000000 Return

Proceed to Step 7

5 Install the tape marked STABCK (stand alone backup) into the streaming tape drive Press the red button on the streaming tape drive to put the drive on line.

6 At the system prompt, type **B MKB500** if using a VAXstation 3100, model 38 or 10e This will boot stand alone BACKUP from magnetic tape The green LED on the streaming tape drive will blink during loading

7 When the stand alone backup is done loading (approximately 30 minutes if booting from magnetic tape, two or three minutes if booting from the hard disk), the system prompts

PLEASE ENTER DATE AND TIME (DD MMM YYY HH MM)

Enter the date and time.

8 The system will then display a list of all available devices and their device types (floppy, hard disks and tape unit) The system will display,

Stand alone BACKUP V5 5, the date is DD-MMM YYYY HH MM

followed by the $ prompt

9 If booting from the streaming tape, press the red button on the streaming tape drive to put it on line When the green LED quits flashing and remains ON, remove the tape

10. Two system tapes are required to install the operating system Install the tape marked OPRDSK into the streaming tape drive. Press the red button on the tape drive to put it on line and type **YES**.

11 At the $ prompt (remember to type the colon before pressing return), type:

backup/verify/rewind mkb500.oprdsk.bck dka200: Return

12 The OIS console starts to load the tape After 30 minutes, the system prompts.

%BACKUP I STARTVERIFY, starting verification pass

After approximately 60 minutes, this message appears

%BACKUP I RESUME, resuming operation on Volume 2

When the tape is finished a prompt appears telling you to install tape two

13 Install the tape marked OPRD02 into the streaming tape drive and type, **YES** Return

After approximately 5 minutes, this message appears·

%BACKUP I STARTVERIFY, starting verification pass

After approximately 10 minutes, this message appears

%BACKUP I PROCDONE, operation completed Processing finished at (date and time) If you do not want to perform another standalone BACKUP operation, use the console to halt the system

If you do want to perform another standalone BACKUP operation, ensure the standalone application volume is online and ready. Enter "YES" to continue·

14 Type **YES** Return

15 Press the red button on the streaming tape drive When the green LED quits flashing and remains ON, remove the tape

16 Install OISDSK tape Press the red button on the streaming tape drive

17 At the $ prompt, type this command (do not forget the colon)·

backup/verify/rewind mkb500:oisdsk bck dka300. Return

18. The system prompts:

%BACKUP I STARTVERIFY, starting verification pass

In approximately 30 minutes, the system prompts

%BACKUP I PROCDONE.

19. Press the red button on the tape drive When the green LED remains ON, remove the tape.

20 Press the reset button on the back of the VAXserver if an IIOIS40A cabinet is being used.

21 Press the reset rocker switch (located on the OIS power entry panel) toward FULL if an IIOIS401 console is being used

22 At the >>> prompt, type

SET BOOT DKA200 Return

This command instructs the system to always boot off of hard disk 1 This completes the steps for loading the software

23 Boot the system by typing·

BOOT Return

The files can be converted before or after doing the network or cluster configuration

BOOT UP SEQUENCE

The OIS console uses a window presentation style It is a MOTIF interface The console boots directly into a window session then it begins to activate the OIS software There are 30 seconds after the session manager is active to prevent the OIS software from being activated

To prevent the console from activating the OIS software

1 Wait for the session manager icon to appear

2 Immediately open the session manager

3. Choose *ABORT AUTO OIS* from the *OIS STARTUP/SHUT DOWN* pull down menu.

The OIC console uses the same window presentation style but receives its window from the OIS console The OIC con sole boots directly into a windows session, then waits for the OIS console to activate

SAVING, RESTORING AND CONVERTING A CONFIGURATION

To save, restore or convert a configuration, log into the OISENGR account Refer to ***Opening a Terminal Window*** in this section for procedures to open a terminal window Refer to ***Terminal to Terminal Server*** in this section for proce dures to login to a terminal.

Save a Configuration

To run the save utility connect a streaming tape drive to the OIS console and follow these steps·

1. Install a blank tape into the streaming tape drive

2 At the *$ prompt of a terminal or terminal window, type*

SAVECONFIG Return

This command causes ***all*** configuration files to copy to the streaming tape for later restoration.

3 Remove the tape

Restore a Configuration

To restore a configuration stored using the previous save procedure, perform the same steps given in the save proce dure except in Step 2 enter **RESTORECONFIG** in place of **SAVECONFIG** This command causes ***all*** configuration files to copy back to the OIS console from the tape into the correct directories on the hard disk

Convert Files

To convert software release C.2 files to software release E 1 files, connect a magnetic tape drive to the OIS console and follow these steps

1 Load the SAVECONFIG tape into the magnetic tape reader

2 At the *$* prompt of a terminal or terminal window, type

UPGRADECONFIG C2 Return

3 Answer the prompts that appear on the screen The files will convert to current software release format files

4 Remove the SAVECONFIG tape The files in the system are converted to current software release files

Configurable Text Conversion

If modifications to the configurable text of the previous release were made, follow these steps to merge the changes into the configurable text for the current release:

1 Load the SAVECONFIG tape into the magnetic tape reader

2 At the $ prompt of a terminal or terminal window logged into OISENGR, type.

MERGECTEXT

3 At the *Enter Source Release Number* prompt, enter the revision level letter and number of the previous console software for example, **C2**

4 At the *Enter Target Release Number* prompt, enter the revision level letter and number of the current console software, for example, **E1.**

5. The configurable text files saved on the SAVECONFIG tape will now be merged into the configurable text for the current software release

6 Once the merge is complete remove the SAVECONFIG tape

OIS TERMINAL CONFIGURATION

Use a terminal window into the OIS software or the pull down menus on the OIC consoles to start up and shut down an OIS console Usually, the terminal window on the console screen provides an interface for these functions These functions do not require a physically separate terminal device An external device such as a DEC VT series terminal can be connected to the OIS console using a DEC terminal server and DECnet. In all cases, window use is the same

Opening a Terminal Window

The operator requires a terminal window to perform operations such as running terminal utilities and executing system commands An application can be run by typing the appropriate command at the dollar sign ($) prompt of the terminal window To open a terminal window on the OIS console or OIC console·

1 Open the session manager window by placing the mouse pointer over the session manager icon and clicking mouse button 1.

2 Position the pointer over *Applications* at the top of the session manager window

3. Press and hold mouse button 1, then drag the cursor to *Login Window*.

4 Release mouse button 1

5. After a short time, the terminal window appears Position the mouse pointer anywhere within the window and click mouse button 1 to assign the keyboard to the window.

6. Type the name of an account at that *Username* prompt, then press Enter or Return

7. Type a password at the *Password* prompt, then press Enter or Return The password does not appear on the screen

8. After a short time, the dollar sign ($) prompt appears

To close a terminal window

1 If not already open, open the terminal window

2 Choose *Exit* from the *File* pull down menu

Terminal to Terminal Server

To use a DEC VT series terminal via a terminal server on DECnet

1 Press Return twice

2 Enter the proper *Username* and *Password* (if required) These entries are site specific, and will vary depending on the network setup

3. When the server prompt (*LOCAL>*) appears, type **CONNECT NODE NAME**, then press Return NODE NAME is the DECnet name of the OIS console the user wants to communicate with

4 Next, enter the *Username* and *Password* For *Username*, type **OISENGR** and press Return Initial passwords are the same as the account names. Use the terminal as required

Terminal to IIOIS40A Cabinet

To use a DEC VT series terminal directly connected to an IIOIS40A cabinet.

1 Press Return

2 Next, enter the *Username* and *Password* For *Username*, type **OISENGR** and press Return Initial passwords are the same as the account names Use the terminal as required

You cannot reload the disk on which VMS resides while VMS is running. The accounts and log on procedures described above do not apply to system disk loading. Refer to ***SOFT WARE INSTALLATION*** to learn how to load the system disk.

NETWORK/CLUSTER CONFIGURATION

Configuration allows the OIS console (IIOIS401) to communi cate with auxiliary terminals (for example, monitors two through four) When using an IIOIS40A main console, the remote screens are numbered monitors one through four The remote screens must also be configured

This process is known as configuring the network or cluster. Installing the software also sets up a network or cluster configuration to allow system start up and testing This section describes how to change the network and cluster parameters to match the network and cluster configuration

The network or cluster configuration steps **must** be per formed before connecting an OIS console to a plantwide network or a network with other OIS consoles

During cluster configuration, the windowing system may go blank on the OIS console due to start up DECnet or cluster errors the screen goes black and an error message appears in the top two or three lines of the screen) Press Ctrl and F2 together to restore the windowing system Repeat if needed Configuration tasks are somewhat complex, please read these steps closely

NOTES.

1 Refer to the ***VMS Systems Manager's Manual*** for more nforma t on about network or c uster conf gurat on

2 The ma n O S conso e and its remote mon tors should not be connected to the arger network unt l they are conf gured

IIOIS40A and IIOIS40D License Registration Procedure

The OIS distribution tapes include a preloaded license DEC PAK (product access key) for VAX or VMS This license is inappropriate for IIOIS40A and IIOIS40D configurations Remove the preloaded license and load the license PAK that ships with the system to register the correct license in its place

The following steps should be performed ***after*** the system's disks have been loaded, but ***before*** any network or cluster configuration procedures are run.

1 Log into the SYSTEM account.

2 To remove the current license from the license data base enter the following·

$ LICENSE DISABLE/ISSUER=DEC/AUTHORIZATION=
ALS- WM-[redacted] Return
92149-56

3 To register the license PAK that ships with the system run the license management utility.

$ VMS LICENSE Return

4 Respond to the questions as follows

a Choose option 1, *Register a PAK*

b Enter information from the license PAK as prompted

c After entering **NO SHARE** in response to the *KEY OPTIONS* question, the system will ask·

Is this PAK restricted to a cluster member node? [YES]

Press Return to respond to this question.

d When prompted for the node name, enter the proper DECnet node name for the system

e After entering all information from the license PAK, use the option of either proceeding with the registration procedure, or of going back and correcting any data that has been entered improperly Make corrections as needed, then proceed to register the license

f Ignore the error message about already having a PAK registered

g Exit the license registration utility

5 Enter the following commands

$ LICENSE UNLOAD VAX-VMS Return

$ LICENSE LOAD VAX-VMS Return

92149-56
$ LICENSE CANCEL/AUTHORIZATION-ALS-WM-[redacted]
-[redacted]TERM=01-JAN-1991 VAX-VMS Return

6 VAX or VMS is properly licensed and registered at this point.

Ethernet Hardware Address Configuration

The Ethernet hardware address of each auxiliary terminal must be known in order to configure them. All addresses must be entered into the main console in order to configure the main console and auxiliary terminals.

To find out the address, follow these steps:

1. At each auxiliary terminal, press the reset rocker switch to FULL. On the IIOIC403 console, press the reset button on the power entry panel.

2 At the >>> prompt, type:

SHOW ETHERNET Return

3 An Ethernet address with this format is displayed

08 00 2B-XX XX XX

Please note this address and repeat Steps 1 through 3 for each auxiliary terminal. Leave the system in the halted mode.

NOTE: As shipped, password for the OISENGR account is the same as the account name. The password for the SYSTEM account is BAILEY CONTROLS. All passwords may be changed by the system manager.

4 At the OIS console, log into the SYSTEM account.

On the dual monitor consoles, select the monitor the mouse will control by pressing the button on the right of the floppy disk on the operator interface panel. Use the *Login Window* from the pull-down menu to log into the system account.

5 To enter the Ethernet address into the main console, at the $ prompt, type

CEA *terminal name hardware address* Return

Where:

terminal name	Name assigned to auxiliary terminal (either TERMNL1, TERMNL2, TERMNL3 or TERMNL4)
hardware address	Hardware address noted in Step 3

6 Repeat Step 5 for each auxiliary monitor.

7 At ***each*** auxiliary terminal, type this command at the >>> prompt:

SET BOOT ESA0 Return

BOOT Return

The terminal will boot from the main console through the Ethernet.

The OIS cluster can now be started and put into use. If any node name or DECnet address needs changed refer to ***DECnet Parameter Configuration*** in this section

DECnet Parameter Configuration

Node name or address changes to both the main console and auxiliary terminal must be made first to the auxiliary terminal, then to the main console Changes to either a main console or auxiliary terminal must be made only to the main console or auxiliary terminal being changed

To make name or address changes, follow these steps

1 At the auxiliary terminal, log into the SYSTEM account

2 At the $ prompt, type (enter every field)

CHANGE DECNET *new name decnet addr* Return

Where

new name	Desired name.
decnet addr	DECnet address or *n m* (*n* is node area or a number 1 through 63 and *m* is node address or a number 1 through 1023) Defaults for the DECnet address are (Terminal 1) 60 11, (Terminal 2) 60 12, (Terminal 3) 60 13, (Terminal 4) 60 14

3 At the main console, log into the SYSTEM account

4 At the $ prompt, type.

CHANGE DECNET *new name decnet addr* Return

Where

new name	Desired name
decnet addr	Desired DECnet address or *n m* (*n* is node area or a number 1 through 63 and *m* is node address or a number 1 through 1023)

5 At this point, all the auxiliary terminals and the main OIS console should be shutdown For IIOIS40A cabinets, press the reset button on the VAXstation For IIOIS401 consoles, press the reset rocker switch to the FULL position.

6. At the >>> prompt, type

BOOT Return

7 At each auxiliary terminal, press the reset rocker switch to FULL (for the IIOIC403 console, press the reset button on the power entry panel).

8 At the >>> prompt, type.

BOOT Return

This will cause the main console and the auxiliary terminal to reboot with the new configuration

9 On the personal computer, run the PATHWORKS set up program to update the PATHWORKS database to reflect the nodes that it will boot from (all the IIOIS401 consoles and IIOIS40A consoles in the network).

10. At the main console, log into the SYSTEM account.

11 Verify correct address and/or name change by typing this command at the $ prompt·

SHOW NODES Return

This displays all DECnet addresses known to the system.

The steps to add or remove a node name is the same as the steps to change a node name with one difference To add a node name, replace the CHANGE DECNET command with the ADD NODE command

ADD NODE *node_name node address*

Where.

node_name Name of the node being added

node_address Address of the node being added.

To remove a node name, replace the CHANGE DECNET com mand with the REMOVE NODE command

REMOVE NODE *node name*

Where·

node_name Name of the node being removed.

Cluster Parameter Configuration

To use multiple OIS consoles (clusters) on a common net work, cluster passwords and cluster group numbers must be unique to each cluster Incorrect operation will result if these steps are not followed.

1 Isolate the cluster from the Ethernet.

2 At each main console, log into the SYSTEM account.

3 At the $ prompt, type.

CCPG *group num password* Return

Where

group num	New cluster group number (a number 2 through 4095, 10 is the default value)
password	New cluster password (any string of 1 to 31 characters, numbers, underscores or dollar signs).

4 Boot the main console and each configured auxiliary terminal

5 Connect the cables from the main consoles and auxiliary terminals to the Ethernet network Follow the examples shown earlier in this section

DECserver Terminal Server Configuration

A DECserver™ connects printers to the system To configure the DECserver, follow these steps·

1 At the main console, log into the SYSTEM account

2 At the $ prompt, type·

CON 2 SERVER *08 00-2B-XX XX-XX* Return

Where.

08-00 2B XX-XX XX	Ethernet address found on rear of DECserver

3 Press Return after the monitor displays the *CONSOLE CON NECTED (CTRL/D WHEN FINISHED)* message

4 At the prompt, type.

ACCESS Return

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Note that this will not be echoed on the screen

5. Type in any letter at the *Enter Username>* prompt, then press Return. This completes the login to the terminal server.

6 At the *Local>* prompt, type

SET PRIV Return

7 At the *Password>* prompt, type:

SYSTEM Return

8. At the *Local>* prompt, type

DEFINE SERVER NAME *node name* Return

Where

node name Unique DECnet node name for DECserver.

Note this name for future use

9. Configure a DECserver port for printer use by typing these commands

LOGOUT PORT *n* Return

DEFINE PORT *n* **ACCESS REMOTE AUTOBAUD DIS INACTIVITY DIS** Return

DEFINE PORT *n* **SPEED 9600 CHARA SIZE 8 PARITY NONE** Return

DEFINE PORT *n* **FLOW CONTROL XON** Return

DEFINE PORT *n* **SIGNAL ENA** Return

LOGOUT PORT *n* Return

Where.

n Port number or any number 2 through 8

Repeat Step 9 for each port being configured

10 To enter the port definitions, type·

SET NOPRIV Return

LO Return

11 Press Ctrl and **D** together.

12 At the $ prompt, type

SET DEF [DECSERVER] Return

DSVCONFIG Return

Repeat Step 12 for each main console using the server port

13 Answer the questions as shown below

Your selection?	**2** Return
DECserver type?	**DS200** Return (**DS300** if DECserver 300) (**DS700** if DECserver 700)
DECnet node name for unit?	Name from Step 8 Return
DECnet node address for unit?	DECnet address or *n m* (*n* is node area or a number 1 through 63 and *m* is node address or a number 1 through 1023) Return
Ethernet address of unit?	Address from Step 2 Return
DECnet service circuit ID [UNA 0]?	**SVA-0**

14 Press Ctrl and **Z** together

OIS Console Peripheral Configuration

This procedure defines the addresses for peripherals such as printers and keyboards

1 Type these commands

SET DEF SYS$MANAGER Return

DEFINE DEVICES Return

2 Answer the questions

Is this OIS using a MCP02 in SCSI mode (Y or N)?
Enter the number of keyboards this OIS will have (0 4)?

Enter the number of keyboards (MKM modules) in the main console and all auxiliary terminals and press Return

Keyboard For each keyboard, answer these questions.

Enter the device port for keyboard number x.
(_TTxx, or LAT or remote node name)

Where

TTA2	Keyboard wired to the main IIOIS401, IIOIS402, and IIOIS403 console
LAT	Selected if keyboard is wired to a DECserver
remote node name	Keyboard wired to an auxiliary terminal.

If a LAT keyboard is selected, answer these prompts

Enter the server node name where *device name* will be located (Refer to Step 8 of ***DECserver Terminal Server Configuration*** for the name.)

Enter the port name where *device name* will be located (refer to Step 9 of ***DECserver Terminal Server Configuration*** for the name)

For example. the name of port number 2 is PORT 2.

NOTE: *TTA2* s the defau t for keyboard number one on OIS401, IIOIS402 and IIOIS403 ma n conso es Keyboards two through four are remote node ma n conso es Enter remote node names for keyboard number one through four on the IIOIS40A and IIOIS40D main console and each aux ary term na

Printer For each printer, answer these prompts

Enter the number of printers this OIS 40 will have (0-4)?

Enter the number of printers used by the main console and press Return.

Enter the device port for assignment for printer number x
(_TTxx, or LAT or remote node name)

Where

TTA2	Printer wired to the main IIOIS401, IIOIS402 or IIOIS403 console.
LAT	Printer wired to a terminal server.
remote node name	Keyboard wired to an auxiliary terminal.

If a LAT device is selected, answer these prompts·

Enter the server node name where *device name* will be lo cated. (Refer to Step 8 of ***DECserver Terminal Server Configuration*** for the name)

Enter the port name where *device name* will be located (refer to Step 9 of ***DECserver Terminal Server Configuration*** for the name)

For example the name of port number 2 is PORT 2

Copy screen printer For each copy screen printer, answer these prompts

NOTE Each copy screen printer must be connected to a server

Enter the number of copy screen printers this OIS 40 will have (0 4)?

Enter the number of printers used by this main console and press Return

Enter the device port for assignment for copy screen printer number \ (LAT)

Where.

LAT	Copy screen printer wired to a terminal server

Answer these prompts

Enter the server node name where *device name* will be lo cated. (Refer to Step 8 of ***DECserver Terminal Server Configuration*** for the name.)

Enter the port name where *device name* will be located (Refer to Step 9 of ***DECserver Terminal Server Configuration*** for the name)

For example. the name of port number 2 is PORT 2

3 To enter the previous changes, type

REBOOT Return

4 Load the terminal server with the new configuration, by powering down and then powering up the terminal server

OIC Console Peripheral Configuration

This procedure defines the addresses for peripherals such as printers and keyboards.

1 Type these commands:

SET DEF SYS$MANAGER Return

DEFINE DEVICES Return

2 Answer the questions:

Enter the number of copy screen printers this OIS 40 will have (0 4)?

Enter the number of printers used by this auxiliary terminal and press Return

Enter the device port assignment for copy screen printer number x (LAT)

Where.

LAT Copy screen printer wired to a terminal server

Answer these prompts

Enter the server node name where *device name* will be lo cated (Refer to Step 8 of ***DECserver Terminal Server Configuration*** for the name)

Enter the port name where *device name* will be located (refer to Step 9 of ***DECserver Terminal Server Configuration*** for the name)

For example the name of port number 2 is PORT 2.

3 To enter the previous changes, type

REBOOT Return

4 Load the terminal server with the new configuration, by powering down and then powering up the terminal server

Configuring a Personal Computer as a DECnet Node

The following are the minimum hardware and software needed to configure a personal computer as a DECnet node. This enables the personal computer to use OIS software in X windows and to communicate on the Ethernet network All software required, except the personal computer software, is included in the OIS software

Be sure that the personal computer hardware is adequate to install the software Note that the blink function does not work while in X windows

HARDWARE

IBM® compatible 286 based, 386 based, or PS/2 computer with.

- 1 5 megabytes of main memory
- 2 0 megabytes of free disk drive space
- MS DOS® version 3 3 or later
- Monitor with EGA, VGA or VGA with graphics capability
- Microsoft®, Logitech™, DEC Q6VSB CZ or DEC Q6VSA CZ mouse
- DEC LK250 CA keyboard
- DEC DE100 AA (also referred to as DEPCA) or 3 COM 3C503 Ethernet Communications Controller

SOFTWARE

- DEC PATHWORKS™ for DOS Media QL OTLAA HI or QL OT LAA HB depending on personal computer hardware
- DEC PATHWORKS for DOS License QL OTLA9 AA

Configuration and Startup Notes

Before a personal computer can work as a node, the PATH WORKS for a personal computer must be installed, the personal computer must be configured as a node on the Ethernet network, and the fonts must be loaded on the personal computer and compiled This can be done by follow ing these steps

1. Load the PATHWORKS software version 4.1 and licenses on the personal computer using the supplied instructions

2 Connect the personal computer to the network

3 Run the network control program on the personal com puter and on all OIS consoles that will send windows to or communicate with the personal computer The **ADD NODE**

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® MS DOS is a trademark of Microsoft Corporation
® Microsoft is a registered trademark of Microsoft Corporation
TM Logitech is a trademark of Logitech Incorporated
TM DEC PATHWORKS is a trademark of Digital Equipment Corporation

command will run from an IIOIS40 (not a personal computer) instead of the network control program.

4 Download the OIS fonts (***.BDF*** files) from the main OIS console by typing the following at the personal computer·

MD \BAILEYFONT Return

CD \BAILEYFONT Return

NFT COPY *node* **"SYSTEM** *sys acct password*".:**SYS$**

COMMON:[SYSFONT.DECW.USER_75DPI]*.BDF Return

Where.

node	Node name of the main OIS console
sys acct password	Password of the SYSTEM account on the OIS console.

Note that everything after the word NODE is typed in without spaces or breaks

NOTE Fonts must be comp ed f go ng from PCSA3 0 to PATHWORKS 4 0

5 Compile the downloaded fonts by typing.

DWDOSFC *fontname*.**BDF** Return

Where

fontname Name of the font file (a non DEC windows font)

NOTE: This command must be entered for each ***.BDF*** file

6. Run the personal computer DECwindows™ configuration utility

7 From the main menu select the *Workstation Setup* option F1.

8 Insert the text, **d:\BAILEYFONT\;**, into the font path statement. for example

font path = e:\XSERVER\fonts;d:\BAILEYFONT\;

The steps to install PATHWORKS software on the personal computer and to add the personal computer to the network are included in the documentation package

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IIOIS40 STARTUP AND SHUTDOWN

There are two ways to start up and shut down an OIS console Run a command procedure from the $ prompt at a DECterm window or use the session manager pull down menus from either the OIS console or OIC console Follow the procedure in the the ***Operator Interface Station (IIOIS40) Operation/ Configuration Manual*** to use the pull down menus This section describes how to run a command procedure to start up an OIS console Start up and shut down may be done from an auxiliary terminal.

Reset

Some configuration procedures require a reset to enter changes to the OIS operating parameters A reset also may be required due to a system problem An OIS reset does not require a physical shutdown of the entire OIS console and VAXstation The session manager and pull down menus provide the reset capability for an IIOIS401, IIOIS402 and IIOIS403 console, or from an IIOIC401, IIOIC402, IIOIC403 and IIOIC404 console Reset of the OIS application can also be done remotely from a terminal

If the OISENGR account cannot be logged into, all console resets, or OIS utilities should be run from the session manager pull down menus Figure 3 40 shows the available session manager pull down menus

To reset the application running at an OIS console

1 Open the session manager window by placing the mouse pointer over the session manager icon and clicking the left mouse button (MB1)

2 Position the pointer over *Startup/Shutdown* at the top of the session manager window

3 Press and hold the left mouse button, then drag the cursor to *OIS Reset*

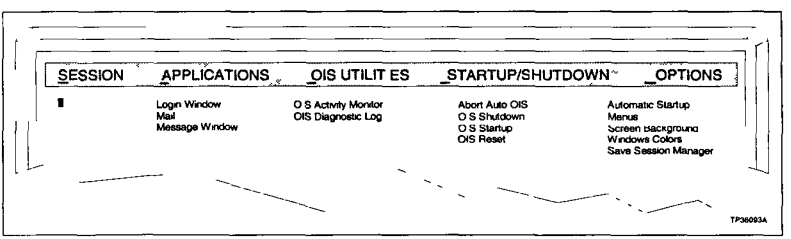


Figure 3 40. Session Manager Pull Down Menus

4 Release the left mouse button. After a short time, all OIS displays and icons disappear, then reappear at reset comple tion ***Do not*** select *OIS Reset* again while the OIS console performs its reset sequence.

Typing **OISRESET** at a logged in terminal or a terminal win dow performs the same function For an IIOIS40A and IIOIS40D cabinet, reset the application using an auxiliary terminal.

IIOIS40 Startup

To start up the OIS console, follow these steps.

1 Place the cursor over the session manager icon and dou ble click the left mouse button to open the session manager window.

2 Place the cursor over the word *Startup/Shutdown* at the top of the session manager window

3 Press and hold down the left mouse button, move the cursor down until it is over *OIS Startup*

4 Release the mouse button

5 A message that says *SYSTEM INITIALIZATION IN PRO GRESS* will appear in the session manager window Several minutes later these messages appear

MEMORY RESIDENT INITIALIZATION COMPLETE
NOW ACTIVATING OIS SOFTWARE
THE OIS WINDOWS WILL APPEAR IN SEVERAL MINUTES

Type **OISSTARTUP** at a terminal or terminal window logged into the OISENGR account console performs the same func tion

IIOIS40 Shutdown

To shut down the OIS console, follow these steps

1 Place the cursor over the session manager icon and dou ble click the left mouse button to open the session manager window

2 Place the cursor over the word *Startup/Shutdown* at the top of the session manager window

3 Press and hold down the left mouse button, move the cursor down until it is over *OIS Shutdown*

4 Release the mouse button.

5 A message that says *OIS SOFTWARE BEING DISABLED* will appear in the message window Several minutes later these messages appear in the message window

OIS SOFTWARE NO LONGER ACTIVE

Typing **OISSHUTDOWN** at a terminal or terminal window logged into OISENGR account performs the same function

IIOIS40 Startup from an IIOIC40 Console

To start up the OIS console from an OIC console after loading the software, choose *OIS Startup* from the *Startup/Shutdown* session manager menu Refer to ***IIOIS40 Startup*** for details

IIOIS40 Shutdown from an IIOIC40 Console

To shut down the OIS console from an OIC console after loading the software, choose *OIS Shutdown* from the *Startup/Shutdown* session manager menu. Refer to the *IIOIS40 Shutdown* for details

BACKING UP/RESTORING IIOIS40 DISKS

After building an OIS system (software load, network and cluster configuration and the database configuration), back up the system disks In the event of a disk failure or other hardware failure, the system will not have to be rebuilt from scratch

Saving a disk image to a streaming tape cartridge requires connecting the streaming tape drive to the VAXstation and booting up with a full boot Refer to the start up for a streaming tape unit earlier in this section

Disk Backup Procedure

The VMS operating system must be cleanly shut down before a complete disk copy can be performed. Before doing this, exit any open accounts At the OIS console, log into the SYSTEM account as follows.

NOTE: As sh pped, password for the O SENGR account s the same as the account name The password for the SYSTEM account s BAILEYCONTROLS All passwords may be changed by the system adm n strator

1 At the start up screen (if start up screen is not displayed, quit session in progress and wait a few seconds), type.

SYSTEM Return in the *Username* field and

BAILEYCONTROLS Return in the *Password* field

2 At the $ prompt, type·

SHUTDOWN Return

3 When the message *USE CONSOLE TO HALT* appears, press the reset button (for IIOIS40A consoles) or the reset rocker switch (for IIOIS401, IIOIS402 and IIOIS403) to FULL.

4 To load the utilities, at the >>> prompt, type·

B/E0000000 Return

5 At the *DATE* and *TIME* prompt, type the appropriate information.

6 Insert a blank TK50 tape cartridge into the streaming tape drive

7 At the $ prompt, initialize the cartidge by typing in a 6 character label For example·

$ INIT $ TAPE1 *label*

Where

label A label of 1 to 6 characters.

8. At the $ prompt·

For the VAXstation 3100, model 30s equipped with a magnetic tape drive, type.

backup/verify/rewind/label=*xxxxxx* **dka200: mka500:syssav.bck** Return

For the VAXstation 3100, model 38 or 10e, type.

backup/verify/rewind/label=*xxxxxx* **dka200. mkb500:syssav bck** Return

Where.

xxxxxx A label of 1 to 6 characters

When these steps are complete, the system will ask if another stand alone backup is desired At this point, back up the applications disk as follows:

1 For the VAXstation 3100, model 30s equipped with a magnetic tape drive, type·

backup/verify/rewind/label=*xxxxxx* **dka200 mka500:oissav.bck** Return

For the VAXstation 3100, model 38 or 10e, type.

backup/verify/rewind/label=*xxxxxx* **dka200: mkb500·oissav.bck** Return

Where.

xxxxxx A label of 1 to 6 characters

2 When backup is complete, press the reset button (for IIOS40A consoles) or the reset rocker switch (for IIOIS401, IIOIS402 and IIOIS403 console) to FULL.

3 At the >>> prompt, type

BOOT [Return]

Log on and bring up the OIS console Be sure to label and date all backup disks.

Disk Restore Procedure

To restore the system disk from a backup tape follow these steps

NOTE The VMS operat ng system must be c ean y shut down before restoring the system d sk from a backup tape Before do ng th s ex t any account open At the ma n OIS conso e fo ow steps 1 through 3 to log nto the SYSTEM account

1 At the start up screen (if the start up screen is not dis played, quit session in progress and wait a few seconds), type

SYSTEM [Return] in the *Username* field and

BAILEYCONTROLS [Return] in the *Password* field

2 At the *$ prompt*, type

SHUTDOWN [Return]

3 When the message *USE CONSOLE TO HALT* appears, press the reset button (for IIOIS40A consoles) or the reset rocker switch (for IIOIS401, IIOIS402 and IIOIS403 console) to FULL.

4 To load the utilities, at the >>> prompt, type

B/E0000000 [Return]

5 At the *DATE* and *TIME* prompt, type the date and time.

6 Insert the desired system backup streaming tape car tridge into the streaming tape drive

7 At the $ prompt

For the VAXstation 3100, model 30s equipped with a mag netic tape drive, type.

backup/verify/rewind mka500:syssav.bck dka200: Return

For the VAXstation 3100, model 38 or 10e, type.

backup/verify/rewind mkb500:syssav.bck dka200: Return

When the entry is complete, the system will ask if another restore is wanted. At this point, restore the applications disk as follows

1 Insert the backup streaming tape cartridge into the streaming tape drive.

2 At the $ prompt.

For the VAXstation 3100, model 30s equipped with a mag netic tape drive, type

backup/verify/rewind mka500 oissav bck dka300: Return

For the VAXstation 3100, model 38 or 10e, type·

backup/verify/rewind mkb500:oissav bck dka300 Return

3 When restore is complete, press reset (for IIOIS40A con soles) or the reset rocker switch (for IIOIS401, IIOIS402 and IIOIS403 console) to FULL

4 At the >>> prompt, type.

BOOT Return

Log on and bring up the OIS console.

SECTION 4 - HARDWARE

INTRODUCTION

This section contains the hardware used by the IIOIS40 and IIOIC40 operator interfaces. Each entry contains jumper and switch configurations for the IIOIS40 and IIOIC40 operator interface and where it is used. Each entry also contains component locations and connections

NOTE: The components in the OIS and OIC consoles are configured at the factory Settings shown in Section 4 are not required to operate your operator interface Information in this section is given in case settings are changed or hardware needs to be replaced

HARDWARE

Table 4 1 lists the hardware used in the IIOIS401, IIOIS402 and IIOIS403 operator interface station console and IIOIS40A and IIOIS40D driver cabinet This table also lists the hardware used for the operator interface consoles IIOIC401 19 inch tabletop, IIOIC4021, IIOIC4022 and IIOIC4023 console, IIOIC403 environmental cabinet, and IIOIC404 panel mounted Table 4 2 contains the SCSI bus addresses for the hardware

Table 4 1 OIS/OIC Hardware

Part Nomenclature	OIS		OIC				Description
	401 402 403	40A 40D	401	4021 4022 4023	403	404	
1948564A1	X			X			Power supply (jumper set voltage)
1948564A2			X		X	X	Power supply (auto set voltage)
1948756A2	X						VAXstation 3100 model 38 (with disks)
1948757A1			X	X	X	X	VAXstation 3100 mode 38 (without disks)
1948801A1		X					VAXserver 3100 mode 10e
6638235A1	X		X	X	X	X	Keyboard interface panel
6638353A3	X						Power entry panel
6638353A4				X			Power entry panel
6638514A1	X		X	X	X	X	Keyboard assembly
6638623A3	X		X	X	X	X	Color monitor (19 inch)
6638801A2	X			X			Sixteen slot multibus card cage
6638801A4		X					Sixteen slot multibus card cage
6639225A1		X					Power entry panel (side in)
6639503A1					X		Power entry panel
IIADP01	X		X	X		X	Annunciator display panel (tabletop)
IIADP02	X			X			Annunciator display panel

Table 4 1 OIS/OIC Hardware (continued)

Part Nomenclature	OIS		OIC				Description
	401 402 403	40A 40D	401	4021 4022 4023	403	404	
IIAKB03	X		X	X	X	X	QWERTY engineering keyboard
AMS02	X		X	X	X	X	Mouse
ATB02	X		X	X		X	Trackball
DOP05		X					Rack mount opt ca d sk
DOP06	X						Tabletop opt ca d sk
DST02/3	X	X					Stream ng tape dr ve for arch va storage
MCL01	X	X					Mu t bus commun cat on loop modu e
MCP01	X	X					Mult bus communicat ons processor module for 10 000-tag system
MCP02	X	X					Mu t bus commun cat ons processor modu e for 30 000 tag system
IMKM02	X		X	X	X	X	Mult bus keyboard modu e
MLM01	X	X					Mu t bus loop modu e
MRM02		X					Mu t bus reset modu e
PRT02	X	X					B ack and wh te pr nter
PRT03	X	X					Co or pr nter
IIPRT04	X		X	X	X	X	Video copier (color)
PRT05	X	X					Black and wh te pr nter (h g h speed)
VTE02		X					Term na for d agnost cs/start up
NADS03					X		Annunc ator d sp ay pane

Table 4 2 SCSI Bus Hardware Addresses

Address	SCSI Bus A Device	SCSI Bus B Device
0	Unused	Opt ca d sk dr ve
1	Unused	Unused
2	Hard disk drive (200 Mbyte)	Unused
3	Hard disk dr ve (100 Mbyte)	IIMCP02
4	Unused	F oppy d sk drive
5	Unused	Tape dr ve
6	VAXstat on	VAXstat on
7	Unused	Unused

MULTIBUS HARDWARE

The multibus hardware consists of the multibus card cage and the modules. The modules are discussed following the multibus card cage in this section.

Multibus Card Cage

Ba ey Part Number - 6637801A? (IOIS401/2/3 I O C4021/2/3)
Ba ey Part Number - 6637801A4 (O S40A w th sl de n power supp y)

The multibus card cage provides the communication paths and defines the priority level for the IIOIS40, IIOIS40A and IIOIC402 multibus modules listed in Table 4 3 The modules in the card cage are not slot dependent.

Table 4 3 Multibus Modules

Slot	Card	Description
1	IMKM02	O S and O C conso es The mu t bus keyboard modu e connects the keyboard nterface panel to the VAXstat on
1	I MRM02	Dr ver cab net The mu t bus reset module prov des system reset
4	I MCP01 or IMCP02	The mult bus communicat on processor modu e conta ns a brary of commands wh ch send and retr eve data from other process contro un ts and conso es
6	I MLM01	The mu t bus oop modu e a lows the IIMCL01 modu e and the I MCP01 module to commun cate together
8	I MCL01	The mu t bus commun cat on oop term nat on modu e term nates the coax a or tw nax a cab e of the commun cat on oop

Figure 4 1 shows the modules in the IIOIS40 multibus card cage Figure 4 2 shows the modules in the IIOIC402 multibus card cage. Figure 4 3 shows the modules in the IIOIS40A and IIOIS40D multibus card cage with the slide in power supply Figure 4 4 shows the rear view of the IIOIS401, IIOIS402, and

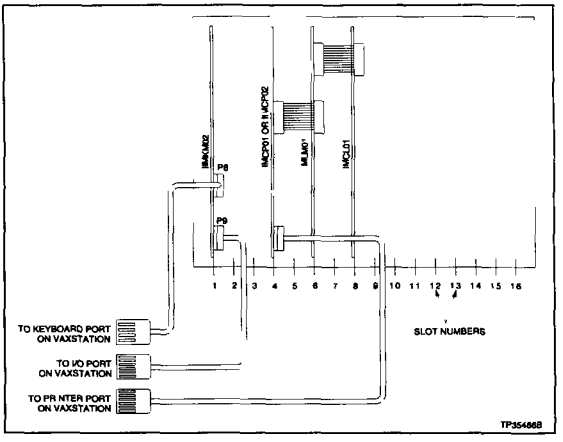


Figure 4 1. IIOIS40 Multibus Card Cage (Front View)

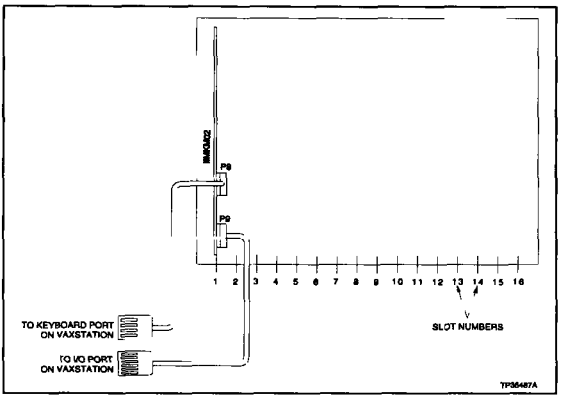


Figure 4 2 IIOIC402 Multibus Card Cage (Front View)

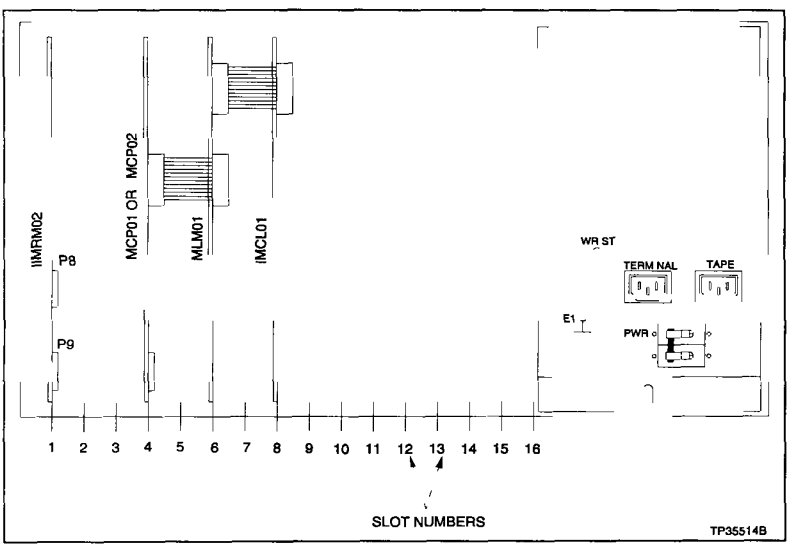


Figure 4 3 IIOIS40A Multibus Card Cage with Slide In Power Supply

IIOIS403 and IIOIC4021, IIOIC4022, and IIOIC4023 multibus card cage

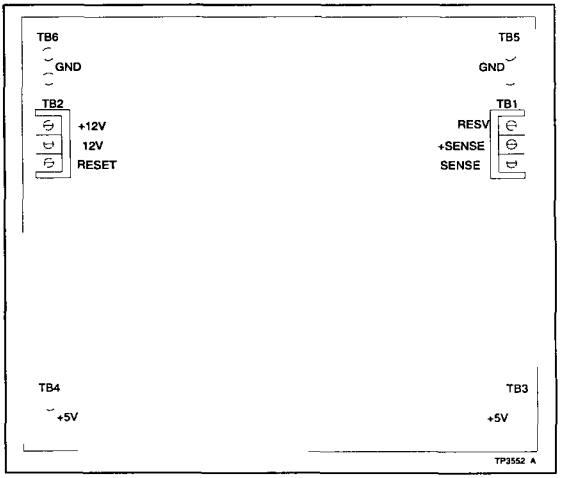


Figure 4 4. IIOIS401/2/3 and IIOIC4021/2/3 Multibus Card Cage (Rear View)

The multibus processor module and multibus graphics con troller modules require priority jumpers on the back of the card cage be set All slots are jumpered for priority interrupts when the system is shipped This allows the multibus cards to be moved to a different slot in the card cage if needed

Table 4 4 lists the multibus card cage power connections shown later in this section

Table 4 4 Multibus Wiring Connections

TB1	TB2	TB3	TB4	TB5	TB6
Use w re assemb y 6638712A1 Connect	Use w re assemb y 6638708A1 Connect	Use w re assemb y 6638711A1 Connect	Use w re assemb y 6638711A1 Connect	Use w re assemb y 6638711A1 Connect	Use w re assemb y 6638711A1 Connect
Green w re to term na one Wh te w re to term na two Make no connect on to term na three	Term na one no connect on V o et w re to term na two Wh te/v o et w re to term na three	Two brown w res from each tab pos t on to CH1 POS on power supp y	One brown w re from each tab pos t on to CH1 POS on power supp y	Two green/ wh te w res from each tab pos t on to CH1 NEG on power supply	One green/ wh te w re from each tab pos t on to CH1 NEG on power supp y

Multibus Module Installation

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.**

1 Insert the multibus modules into the card cage along the upper and lower guide rails Slide the module into the desired position, being careful to align it beneath the correct slot number

2 Press on the module removal tabs on the top and bottom of the card front to fully insert the module into the multibus backplane.

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.**

Remove the modules by pulling the module removal tabs on the top and bottom of the card front toward you and gently sliding the module out of the rack

NOTE: Be sure not to loosen cables from the modules next to the one being removed

Figure 4-5 shows the multibus card removal tabs

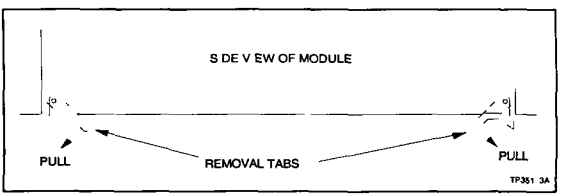


Figure 4-5. Removing Multibus Modules

Multibus Keyboard Module

Ba ey Nomenc ature MKM02

The multibus keyboard interface module interfaces the key board and other operator input devices to the OIS or OIC console There are four jumpers on the MKM module to set for proper operation.

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 4 6 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.

J3 allows the option of resetting the entire OIS console when the MKM watchdog timer circuit times out. Set the jumper to J3 pins one and two for OIS reset on time out Set the jumper to J3 pins two and three for no OIS console reset on time out Factory default is no reset on time out

J4 allows the option of disabling the power supply out of tol erance (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 IIOIC40 consoles Factory default is to enable OOT on all IIOIS40 consoles

See Figure 4 6 for MKM connector locations

NOTES:

1 F gure 4 6 shows cable connect ons for the IO S40 conso e Cab e numbers may be d fferent for other O S and O C mode s Refer to the wiring d agram in Section 3 for the spec f c model of OIS or O C conso e insta ed for comp ete w r ng connect ons

2 Th e two d g ta outputs are open co ector type wh ch s nk up to 250 m amps The two d g ta nputs are rated at up to 250 m - amps

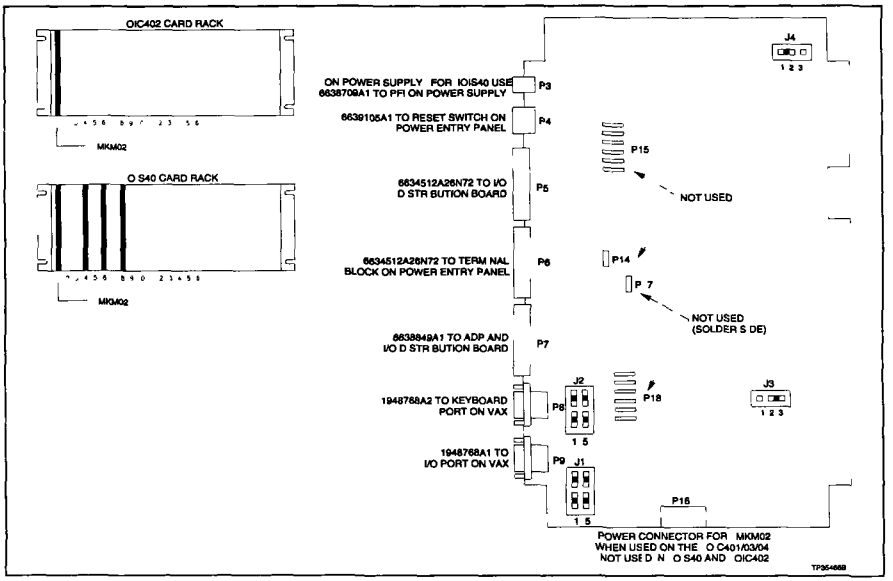


Figure 4 6. Connections for Multibus Keyboard Module

Multibus Reset Module

Ba ey Nomenc ature IIMRM02

The multibus reset module provides power fault interrupt and a reset signal to the multibus backplane through the J1 con nector for an IIOIS40A or IIOIS40D cabinet. Jumper J5 on the MRM module changes polarity of the out of tolerance signal from the power supply. Leave jumper J5 in the default position (pin 2 to pin 3). See Figure 4 7 for wiring connections

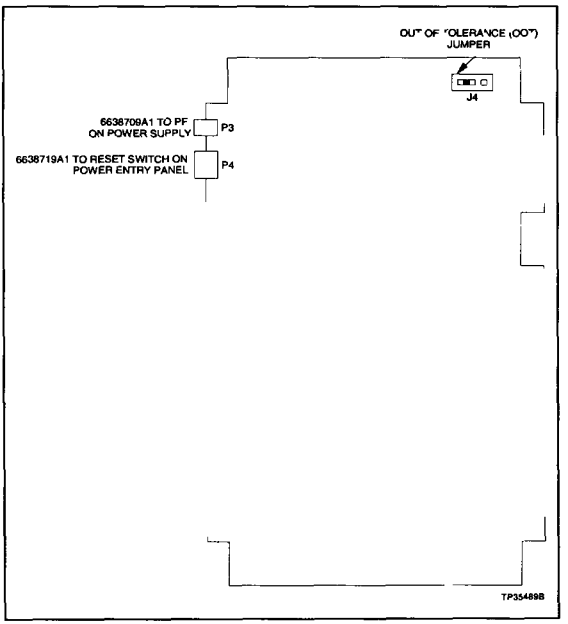


Figure 4 7 Connections for Multibus Reset Module

Multibus Loop Module

Ba ey Nomenc ature IMLM01

The multibus loop module, shown in Figure 4 8, allows communication between the IIMCP01 Multibus Communication Processor Module and the INFI NET or Plant Loop communication highway through the IIMCL01 Multibus Termination Module. The switch settings shown in the figure are default settings, refer to Table 4 5 for jumper and dipswitch settings

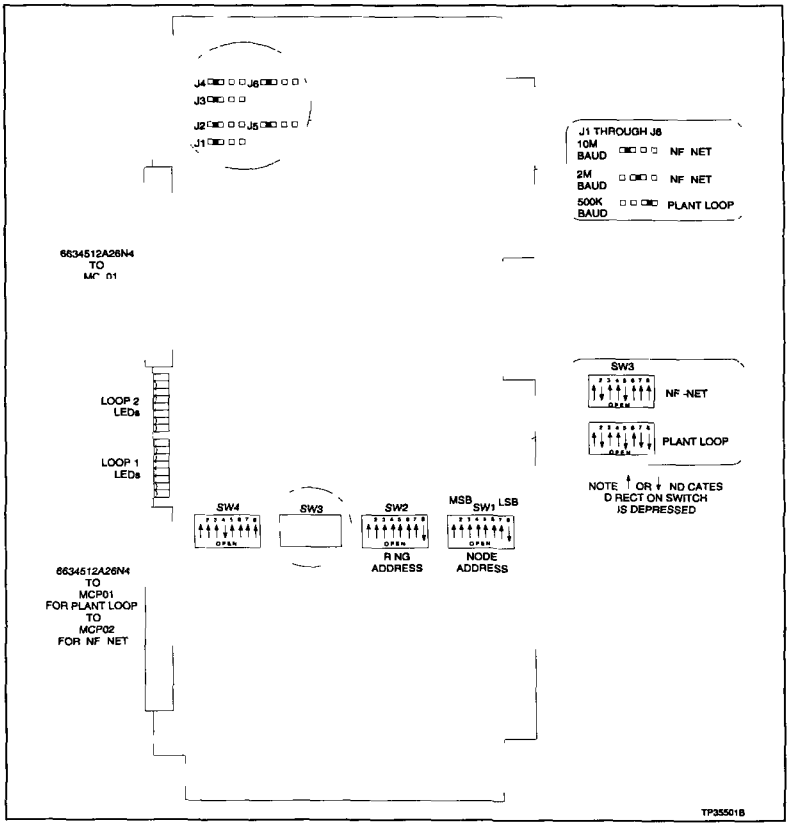
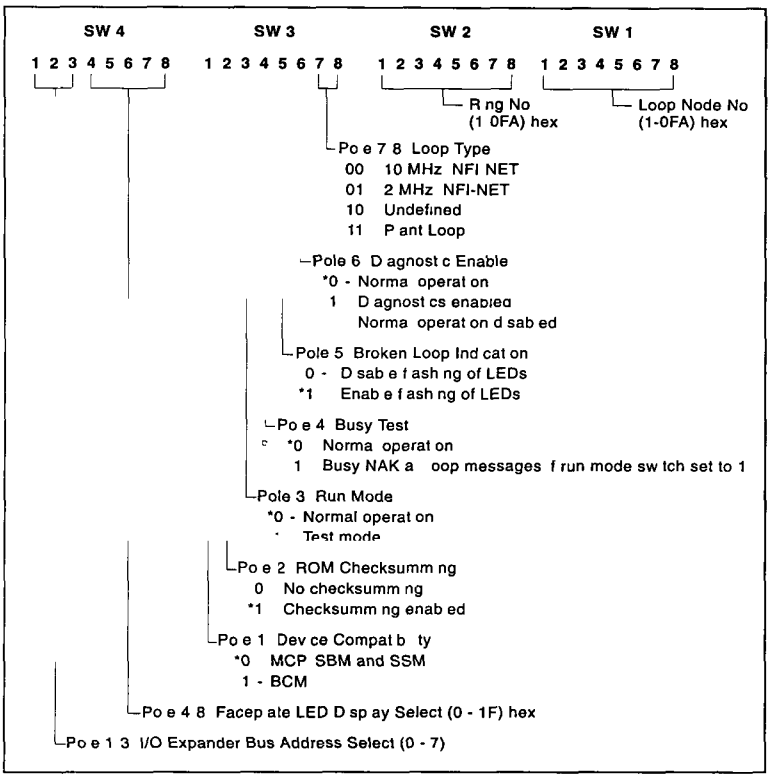


Figure 4 8. Multibus Loop Module

Use two ribbon cables numbered 6634512A26N2 to connect the loop module to the communication processor and to the termination module

NOTE: D pswitch SW1 and SW2 se ects the oop address and r ng number of the OIS Switch setting depends on system configurat on

Table 4 5 Loop Module Configuration



NOTES 0 CLOSED or ON 1 OPEN or OFF
* Norma sett ng

Multibus Communication Processor Module

Ba ey Nomenclature IMCP01

The multibus communication processor module (Figure 4 9) contains a library of commands which send and retrieve data from other process control units and operator consoles The OIS console sends commands to the multibus communica tion processor module requesting it to send or retrieve required data. Configure the multibus communication proc essor module by setting dipswitches Refer to Table 4 6 for the module dipswitch settings.

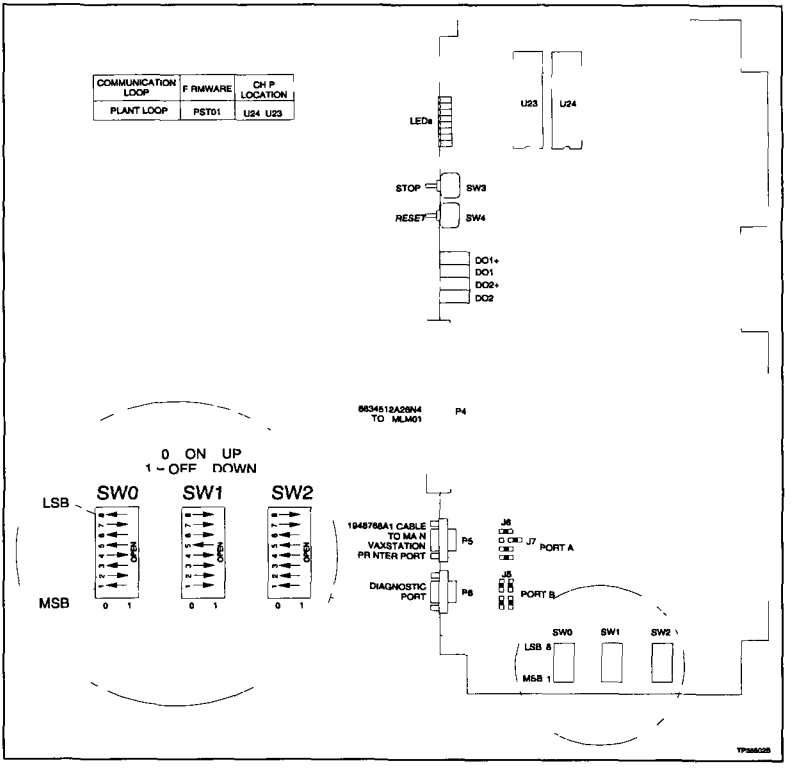


Figure 4 9. Multibus Communication Processor Module

Table 4-6. Multibus Communication Processor Configuration

Switch 0		
Poles	**Function**	**Description**
1	ROM checksumm ng	*0 ROM checksum enab ed 1 ROM checksum d sab ed
2 3	Port A character st cs	00 = 8 data 1 stop, no par ty 01 – 8 data 1 stop even par ty *10 8 data, 1 stop odd par ty 11 8 data, 2 stop, no par ty
4	Port B operat on mode	0 = MU command r ode *1 – N U ut ty mode
5-6	Port B data character st cs (On y f sw tch 4 0 otherw se defaults to 00)	00 8 data 1 stop no par ty 01 8 data 1 stop even par ty *10 – 8 data, 1 stop odd par ty 11 – 8 data, 2 stop no par ty
7	Command checksumm ng	0 command checksum d sab ed *1 command checksum enab ed
8	Unused	

NOTES 0 CLOSED or ON 1 OPEN or OFF
* Norma sett ng

Switch 1 - Baud Rates					
Poles 1-4 Port A	0000 N/U	0100 110	0110 = 600	0101 2400	
	1101 N/U	1100 134 5	1110 = 1200	0011 4800	
	1011 N/U	0010 150	0001 1800	0111 9600	
	1000 75	1010 300	1001 2000	*1111 = 19 2K	
Poles 5-8 Port B	0000 – N/U	0100 110	0110 = 600	0101 2400	
	1101 – N/U	1100 134 5	1110 = 1200	0011 4800	
	1011 N/U	0010 150	0001 = 1800	*0111 = 9600	
	1000 75	1010 300	1001 – 2000	1111 19 2K	

NOTES 0 = CLOSED or ON 1 OPEN or OFF
* Norma sett ng
N/U Not used

Switch 2		
Poles	**Function**	**Descr ption**
1	F rmware test mode	*0 – d sab ed 1 – enab ed
2	D agnost c mode	*0 disab ed 1 enabled
3	NFI NET d agnost cs	*0 d sablec 1 enabled
4 6	Unused	
7	NVRAM nsta ed	0 NVRAM not insta ed *1 NVRAM n stal ed
8	RAM component s ze	0 32K x 8 (512K) *1 = 128K x 8 (2M)

NOTES 0 CLOSED or ON, 1 = OPEN or OFF
* Norma sett ng

Multibus Communication Processor Module

Ba ey Nomenclature IMCP02

The IIMCP02 Multibus Communication Processor Module shown in Figure 4 10 contains a library of commands that send and retrieve data from process control units and other operator stations The OIS console sends commands to the multibus communication processor module via a SCSI bus The module is configured by setting dipswitches and jumpers

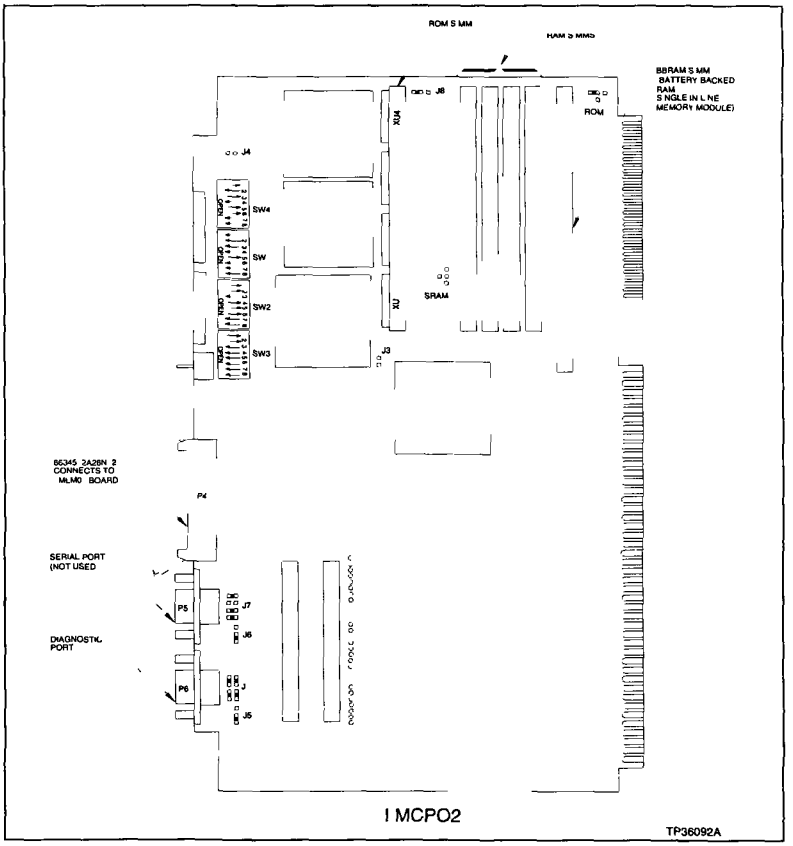


Figure 4 10 IIMCP02 Multibus Communication Processor

Refer to Table 4 7 for the dipswitch settings. The IIMCP02 module is required for systems with 30,000 tags.

Table 4-7. IIMCP02 Switch Settings

Switch	Position	Description	Switch Setting[1]
SW1	1-4	Port A (P5) baud rate	1111 19200
	5 8	Port B (P6) baud rate	**0111 = 9600**
SW2	1	MLM handshake t me-out	**0 = enabled**
			1 d sabled
	2	MLM d agnost cs	**0 = disabled**
			1 – enabled
	3	D agnost c ut t es	**0 = disabled**
			1 enab ed
	4	Hardware d agnost cs	**0 = disabled**
			1 enab ed
	5 8	Not used	—
SW3	1	SCS port	0 d sab ed
			1 = enabled
	2 4	SCS address	**011 = 3**
	5	SCSI par ty check ng	0 d sab ed
			1 = enabled
	6-8	Not used	—
SW4	1	ROM checksumm ng	**0 = enabled**
			1 d sab ed
	2 3	Ser a port sett ngs	00 – 8 d 1 s, no par ty
			01 – 8 d, 1 s even par ty
			10 = 8 d, 1 s, odd parity
			11 8 d 2 s no par ty
	4	Port B (P6) mode	0 CIU command mode
			1 = CIU utility mode
	5	Modem password protect on	**0 = disabled**
			1 – enab ed
	6	Port address ng mode	**0 = disabled**
			1 – enab ed
	7	Command checksumm ng	0 d sabled
			1 = enabled
	8	Not used	—

NOTES 0 CLOSED or ON 1 OPEN or OFF
1 Shaded sett ngs are default sett ngs

Multibus Communication Loop Module

Ba ey Nomenc ature I MCL01

The multibus communication loop module is the termination unit that interfaces the OIS console to the communication highway. See Figure 4 11 for wiring connections

Set jumpers J1 through J6 for the type of cable used in the Plant Loop or INFI NET; either coaxial or twinaxial cable

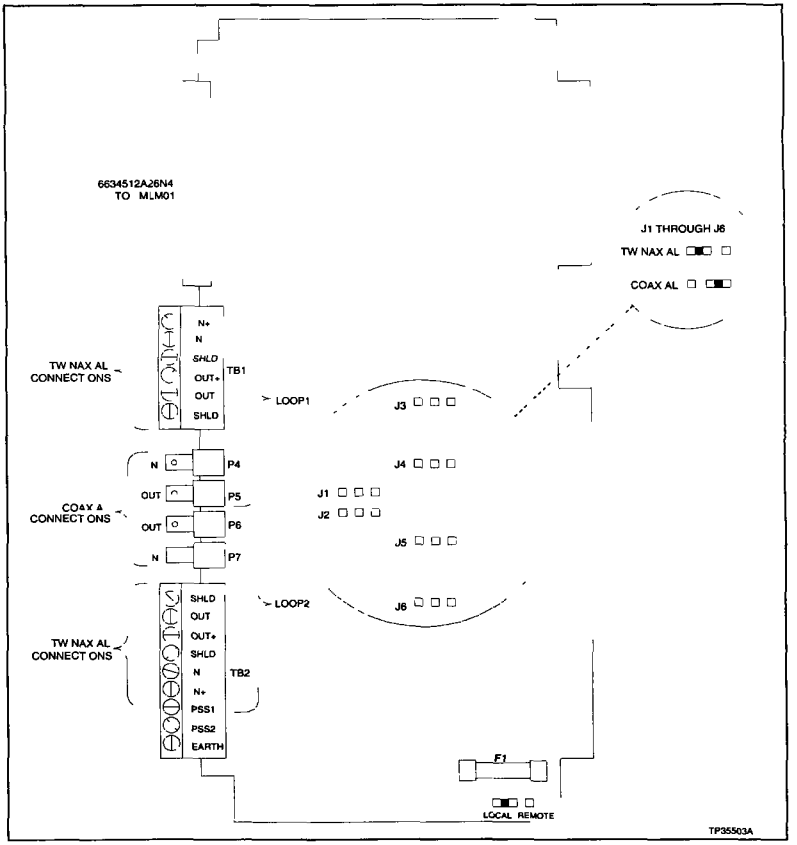


Figure 4 11 Multibus Communication Loop Module

SYSTEM HARDWARE

System hardware consists of the power entry panel, VAX station, operator interfaces and peripherals. This section gives details on component layout, jumpers and cabling where possible Be sure to follow all cautions and warnings in this manual to reduce the chance of injury and equip ment damage.

Information to install the system is in Section 3. Information to remove system components is in Section 7 Refer to Sec tion 8 for a recommended list of spare parts. Additional sources of reference information are listed in Section 1

Keyboard Interface Panel

Ba ey Part Number 6638554A3

CAUTION	**On the keyboard interface panel connector board, set switches 5, 6 and 7 of SW1 closed (on). Failure to close these switches will damage the VAXstation.**
ATTENTION	**Sur la carte de connexion du panneau d'interface au clavier, les poles 5, 6 et 7 de l'interrupter SW1 doivent etre fermes (reglage on). Sinon le VAXstation s'endommagera.**

The keyboard interface panel (Figure 4 12) is located on the IIOIS40 and IIOIC402 cabinet front panel next to the monitor behind a smoked polycarbonate door The panel is located on the IIOIS40A and IIOIS40D console on the front of the power entry panel On the IIOIC401 and IIOIC404 console, the panel is on the front of the case below the monitor. On the IIOIC403 console, the panel is on the front of the power entry panel behind the front door

The keyboard socket is for the operator keyboard supplied with the OIS and OIC consoles The AUX 1 port is for a tabletop annunciator display panel The auxiliary keyboard connector is for a LK250 engineering keyboard The keyboard interface panel connections are listed in Table 4 8 The keyboard inter face panel connectors and the floppy drive connect to the I/O distribution board Connector P9 is not used.

NOTE: The tune/conf g sw tch s n a d fferent ocat on n each OIS or OIC conso e

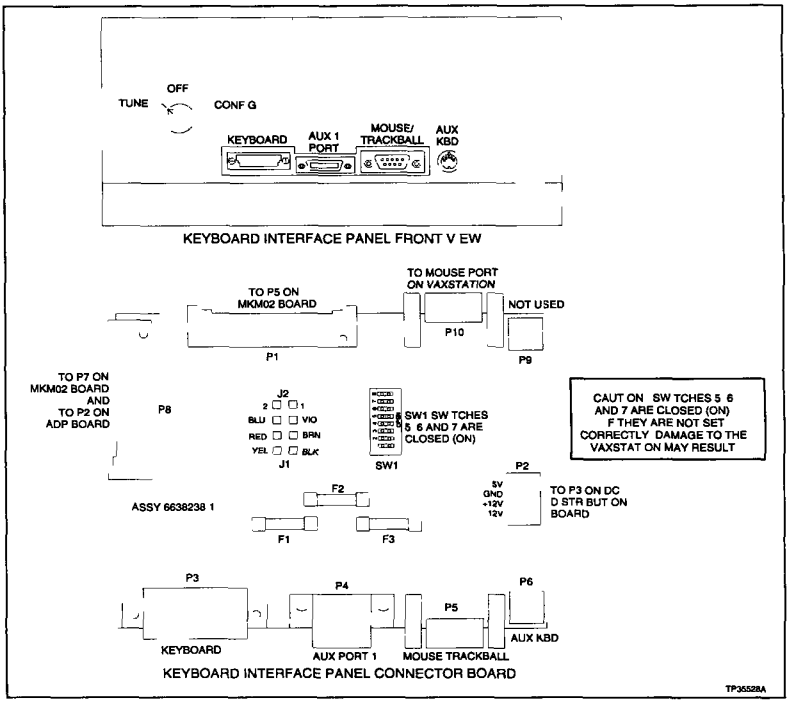


Figure 4 12 Keyboard Interface Panel

Table 4 8. Connections to Keyboard Interface Panel

Connector P1	Connector P2	Connector P8	Connector P10
Connect cable number 6634512A26N72 to P5 on the IMKM02 module	Connect cable number 6638713A1 to P3 on the DC distribution board	Connect cable number 6638849A1 to P7 on the IMKM02 module and to P2 on the ADP panel	Connect cable number 6634266A1 to mouse port on VAXstation

Operator Keyboard

Ba ey Part Number 6638514A1

The keyboard port on the keyboard interface panel is for the OIS and OIC laptop style keyboard. There are six output relays rated at 150 milliamps 24 to 28 VDC and five alarm tones per keyboard. The three foot long coiled cord can be stretched to eight feet See Figure 4 13

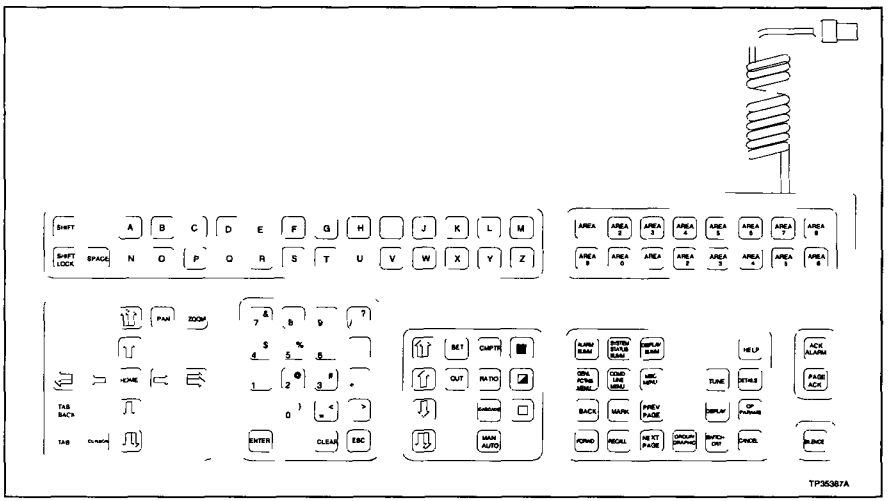


Figure 4 13 Operator Keyboard

Engineering Keyboard

Ba ey Nomenc ature - IAKB03

Each IIOIS40 and IIOIC402 console supports an additional engineering QWERTY keyboard The IIOIS40 and IIOIC402 keyboard plugs into a five pin DIN connector on the keyboard interface panel located to the right of the monitor and below the ADP panel. Each OIC has a five pin DIN connector lo cated on the keyboard interface panel Figure 4 14 shows the engineering keyboard.

Power does not have to be removed from the OIS or OIC before plugging in or unplugging the engineering keyboard Initializing the system is not needed after plugging in or unplugging the engineering keyboard The IIAKB03 keyboard is a LK450 keyboard Keyboard mapping information is in the ***Operator Interface Station (IIOIS40) Operation/Configuration Manual***

NOTES:

1 The IIOIS403 and IIOIC4023 conso es have dua mon tors The upper mon tor uses an LK201 eng neer ng keyboard that is cab ed d rect y to the keyboard port on the VAXstat on w thout hard d sk dr ves The keyboard cord passes through the front door to the VAXstat on c osest to the rear access door

2 The I AKB02 LK250 and IAKB03 LK450 eng neer ng keyboards are used for the O S and O C operator conso es

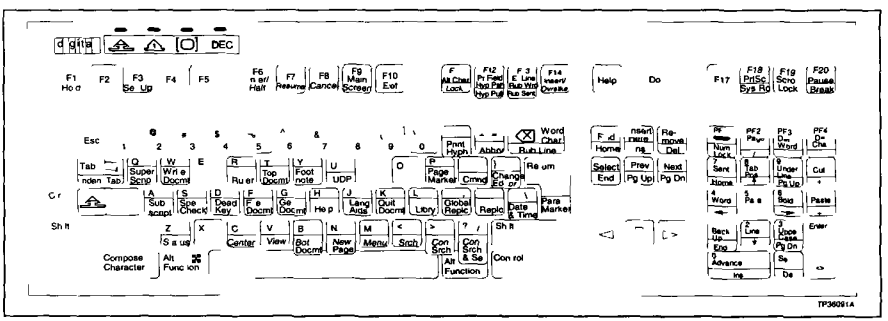


Figure 4 14 Engineering Keyboard

Trackball/Mouse

Ba ey Nomenc ature IATB02 (Trackba)
I AMS02 (Mouse)

The trackball and mouse permit faster cursor positioning during normal operator control or configuration The track ball and mouse plug into the operator keyboard interface panel See Figure 4 15 for cable connections

NOTE· The I O S403 and I OIC4023 conso es have dual mon tors The sw tch on the /O panel selects the mon tor the trackba and mouse control When the sw tch s pressed n (wh te) the trackba and mouse contro the upper mon tor cursor When the sw tch s out (b ack) the trackba and mouse contro the lower mon tor cursor

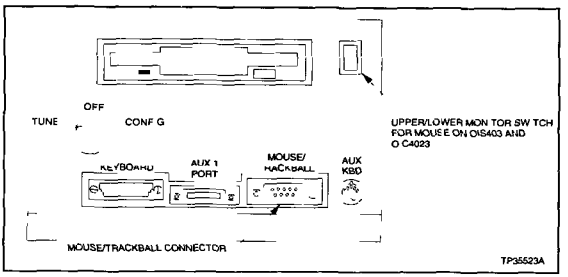


Figure 4 15 Trackball and Mouse Connections

Color Monitor

Ba ey Part Number 1948623A3 (19- nch mon tor)

Color monitor resolution is 1024 x 864 Adding additional color monitors is model dependent. Refer to the color monitor entry in the part replacement procedures of Section 7 for steps to remove the monitor. See Figure 4 16 for the location of the color monitor connections

WARNING	**The monitor will slide out the rear of the IIOIS40 and IIOIC402 console cabinet by itself when the mounting bolts are removed. Removing the rear two bolts without supporting the monitor could cause personal injury.**
AVERTISSEMENT	**Lorsque les boulons d'ancrage sont retires, l'ecran cathodique risque de sortir a l'arrier de l'armoire IIOIS40 et IIOIC402. Si les deux boulons d'ancrage arriere sont retires, il faut retenir l'ecran afin d'eviter toute blessure.**

A second color monitor requires another VAXstation. Refer to Section 3 for VAXstation placement and configuration

1 Plug the monitor cable into the monitor port on the back of the VAXstation (communication port on the VAXserver in the IIOIS40A and IIOIS40D cabinet)

2 Connect the red, green and blue cable plugs to the correct 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 VAXstation

IIOIS40 and IIOIC402 NOTES:

1 DEC cab es connect the ower and upper mon tors of the I O S40 and I O C402 conso es to the mon tor port on the VAXstat ons R G and B represent red, green and b ue on the cable

2 A 9 p n D subconnector connects an externa brightness, con trast and degauss contro Use cab e number 6638720A1 for the ower mon tor and cab e number 6638720A2 for the upper mon tor Br ghtness and contrast controls are mounted on the bezel The degauss sw tch is mounted on the power entry pane

4 Monitor wiring connector location may be slightly differ ent for each model of OIS and OIC consoles

5 Brightness and contrast controls are located on the front panel of the power entry panel of the IIOIC403 console.

6 Intecolor and Aydin monitors are autosensing and do not need to be switched if the power to the cabinet is 120 volt or

240 volt However, other monitors may need to be switched to prevent damage from over voltage or under voltage.

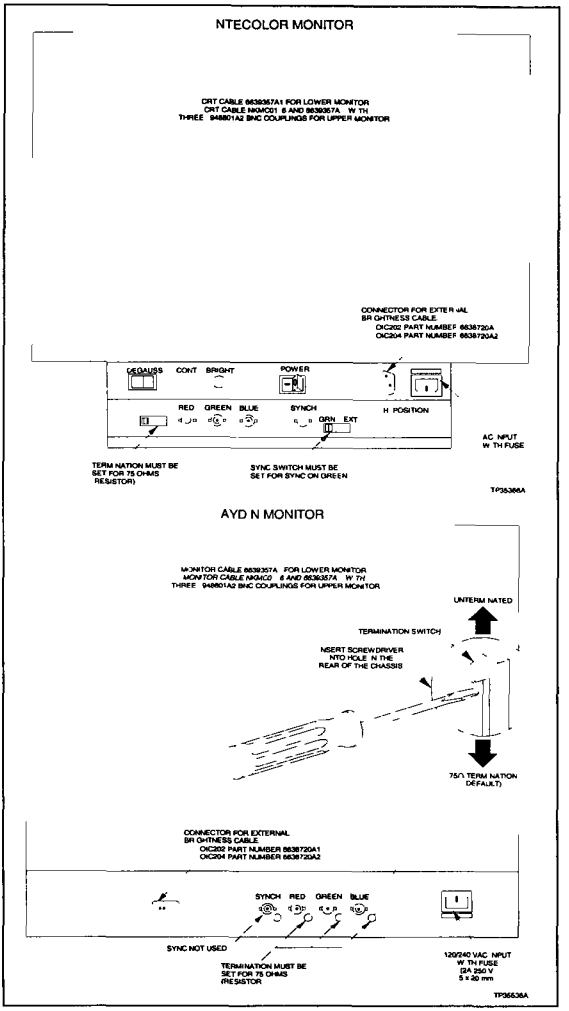


Figure 4 16. Color Monitor

Annunciator Display Panel

Ba ey Nomenc ature I ADP01

The tabletop annunciator display panel provides an addi tional 32 lamps and pushbuttons. Each lamp and pushbutton is assigned to an OIS or OIC display When a tag on a display goes into an alarm condition, the assigned ADP lamp turns on Press the assigned pushbutton to cause the assigned display to be printed to the screen

The IIOIS401, IIOIS402, and IIOIS403 and IIOIC402, IIOIC403, and IIOIC404 consoles can drive up to four table top annunciator display panels Ribbon cable maximum length is 4 5 meters (15 feet) Refer to Table 4 9 for wiring connections See Figure 4 17 for the dipswitch configuration

Table 4 9 Connections to IIADP01 Board

From	To	Cab e No
P1 or P2 on ADP 2	AUX 1 port on keyboard nterface pane	1948978A1
P1 or P2 on ADP 2	P1 or P2 on ADP 3 board	1948978A1

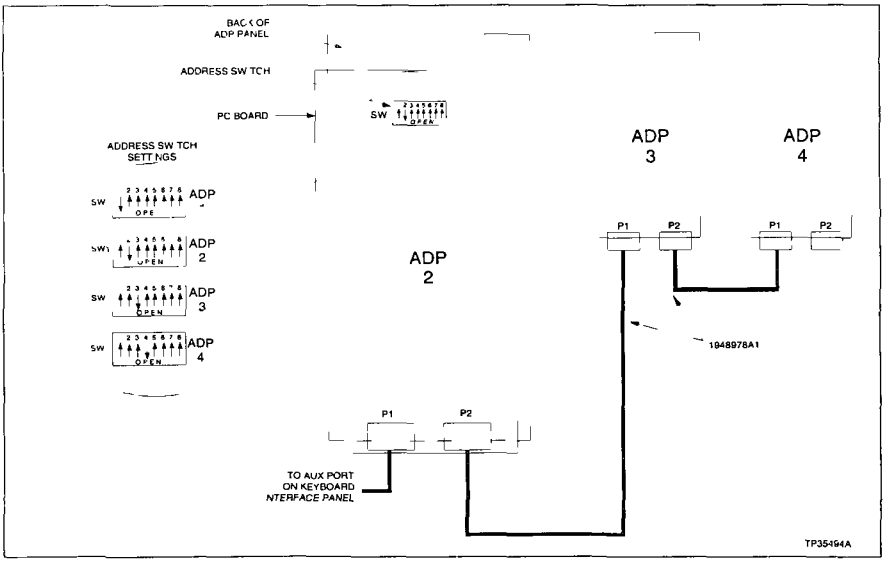


Figure 4 17 IIADP01 Annunciator Display Panel

Annunciator Display Panel

Ba ey Nomenc ature - ADP02

The annunciator display panel provides 32 lamps and push buttons Each lamp and pushbutton is assigned to an OIS display When a tag on a display goes into an alarm condition, the assigned ADP lamp turns on. Press the assigned pushbut ton to cause the assigned display to be printed to the screen

The IIOIS401, IIOIS402, and IIOIS403 and IIOIC402, IIOIC403, and IIOIC404 can drive up to four tabletop ADP panels Refer to Table 4 10 for wiring connections to the ADP board See Figure 4 18 for the dipswitch configuration.

Table 4 10 Connections to IIADP02 Board

From P1	From P1	From P2
To P4 socket on top of main power supp y Use cab e assemb y number 6638713A2 f the s gna cab e connector s on the left edge of the board	To P4 socket on top of main power supp y Use cab e assemb y number 6639106A1 if the s gna cab e connector s on the top edge of the board	To P7 connector on IIMKM02 modu e Use cab e number 6638849A1

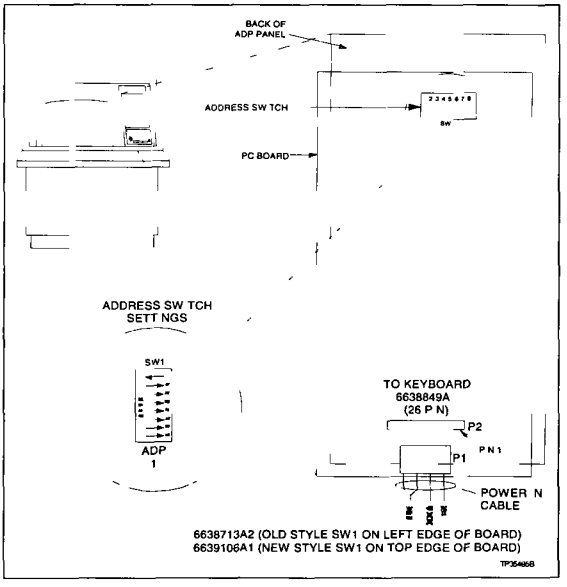


Figure 4 18 IIADP02 Annunciator Display Panel

Annunciator Display Panel

Ba ey Nomenc ature - NADS03

The annunciator display panel provides a panel of 64 lamps and pushbuttons Each lamp and pushbutton is assigned to an OIS or OIC display When a tag on a display goes into an alarm condition, the assigned ADS lamp turns on Press the assigned pushbutton to cause the assigned display to be printed to the screen

NOTE· The IOIC403 ADS pane has a 64 key annunc ator d sp ay pane On y 32 of the keys can be accessed by software

Refer to Table 4 11 for the switch settings and cable connec tions See Figure 4 19 for the dipswitch configuration of the first annunciator display panel

Table 4 11 Connections to IIADS03 Board

From P1	From P2
To P4 socket on top of ma n power supp y Use cab e asse⁻b y ⁻u⁻mbe⁻ 6638713A4	To P7 connector on I MKM02 modu e Use cab e number 6638849A1

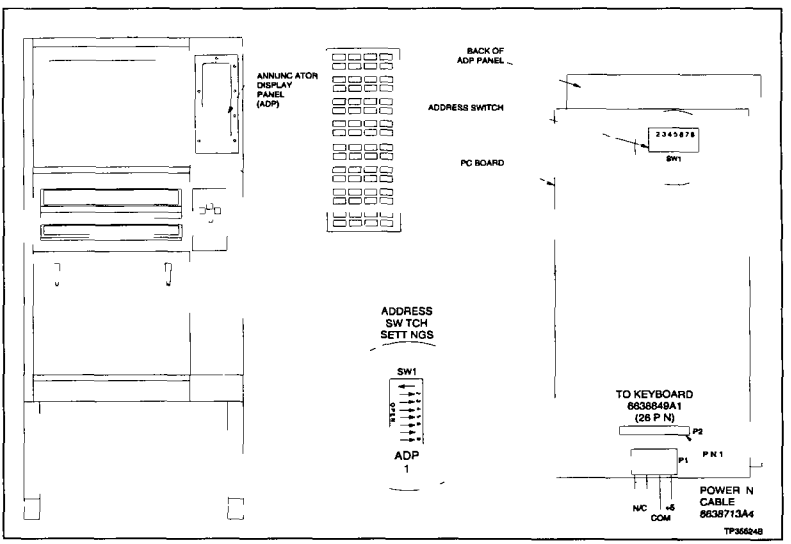


Figure 4 19 NADS03 Annunciator Display Panel

IIOIS401, IIOIS402 and IIOIS403, and IIOIC4021, IIOIC4022 and IIOIC4023 Power Entry Panel

Ba ley Part Number 6638353A3 IIOIS40/1/2/3
6638353A3 I O C4021/2/3

The power entry panel contains the incoming AC power ter minals and system circuit breakers along with ports for connecting peripheral devices, terminals for alarm contact outputs and ports for archival data storage devices The *power entry panel also contains the system reset switch and* the degaussing switches for the monitors

	Failure to plug in the streaming tape drive ribbon cable before turning the tape drive power on may result in equipment failure.
CAUTION	**Read the notice on the front of the power entry panel before turning on the power to the tape drive. Select the streaming tape drive with the same voltage as the power entry panel outlet or equ pment damage may result**
	***Si vous ne branchez pas le cable ruban du derouleur de bande* en continu avant de mettre le derouleur sous tension, le materiel pourrait faire defaut.**
ATTENTION	**Veuillez lire l'avertissement figurant a l'avant du panneau d'entree d'alimentation avant d'alimenter le derouleur de bande. Sellectionnez la meme tension pour le derouleur en continu que pour la sortie du panneau de'entre d'alimentation, sinon la material pourrait subir des dommages.**

The streaming tape port connection is for a streaming tape drive used for rapid reloading of system and user configuration files for the OIS console

NOTE Read the not ce on the pane before you plug n the tape dr ve Plugg ng n the tape reader power cord f rst connects the tape reader ground to the IOIS40 or O C402 conso e

Use the U degauss switch to correct picture distortion due to magnetic fields on the screen of the upper (swivel mount) monitor Use the L degauss switch to correct picture distor tion due to magnetic fields on the screen of the lower cabinet mount monitor

The reset pushbutton resets the OIS or OIC console to an initial power up condition when pressed

A terminal block with six alarm contact outputs 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 configured from OIS software

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

Connect your static ground wrist strap into the wrist strap connector before removing modules from the card cage

The streaming tape power AC outlet on the OIS power entry panel is a convenience outlet for either 120 or 240 VAC device Check the label on the front of the power entry panel before connecting anything into this outlet

CAUTION	**Never install the tape drive to the VAXstation with the VAXstation or tape drive power on. Failure to comply may result in damage to both the VAXstation busses and the tape drive**
ATTENTION	**Ne branches jamais le derouleur de bande au VAXstation lorsque l'un ou l'autre de ces appreils est sous tension. Sinon, les bus du VAXstation et le derouleur pourra t etre endommages.**

Use either 120 VAC or 240 VAC power to supply power to the IIOIS40 or IIOIC402 console through the connector on the power entry panel See Figure 4 20 for the IIOIS40 and IIOIC402 power entry panel connections

NOTES:

1 When connecting 240 VAC to the OS40 or OC402 power entry panel be sure the IO S401 OS402 and OS403 or IOIC4021 IO C4022 and IO C4023 console s set up for 240 VAC

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 OS or OC console

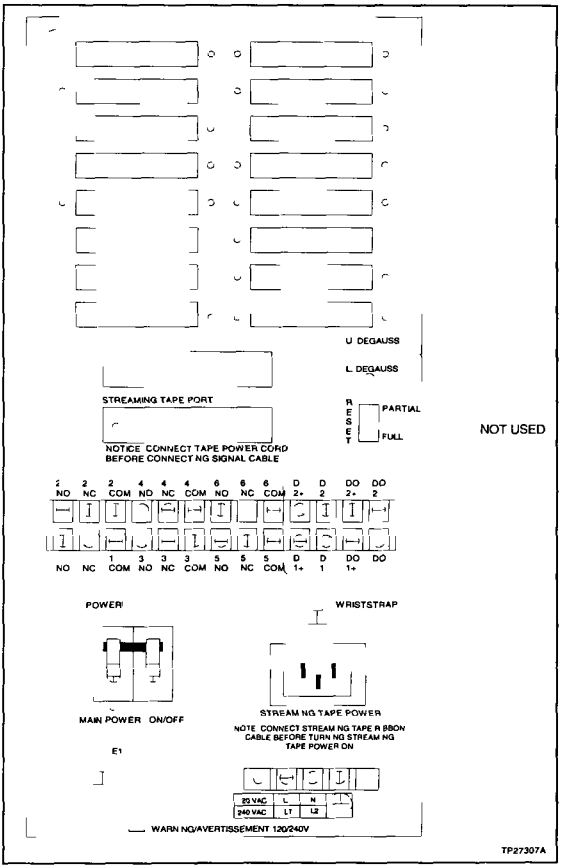


Figure 4 20 IIOIS40 and IIOIC402 Power Entry Panel

IIOIS40A and IIOIS40D Slide-In Power Entry Panel

Ba ey Part Number - 6639225A1

The connector panel contains the incoming AC power termi nals, system circuit breakers and the power supply Table 4 12 contains the power entry panel cable connection

NOTE:
1 The power entry pane s part of the s de n power supp y

2 The IOIS40A and I O S40D power entry panel has no reset button Reset the VAXserver from the D C console or press the reset button on the VAXserver Reset from the OIC conso e resets the VAXserver to the power up state

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 laire default.**

On the power supply, the power ndicator is lit when the AC power is connected to the power entry panel and the main power circuit breaker is on

Connect your static ground wrist strap into the wrist strap connector on the power supply before removing modules from the card cage

CAUTION	**Make sure that all labels on the power supply and the power entry panel are changed to show 240 VAC operation or equipment damage may result if the incorrect voltage is connected to the power supply.**
ATTENTION	**Assurez-vous que le disjoncteur de d'alimentation principale est hors tension avant de modifier le reglage de la tension de service**

Use either 120 VAC or 240 VAC to supply the IIOIS40A and IIOIS40D console through the connector on the power entry panel The power entry panel and the power supply are voltage auto sensing No jumpers or switches need to be set to change input voltage to 120 VAC or 240 VAC

Table 4 12 IIOIS40A/D Power Entry Panel Connector Assignments

Connector Number	Use
P3	Keyboard interface pane
P4	Annunc ator d splay panel
P8	Fan

NOTE Connectors not sted are not used

CAUTION	Never install the tape drive to the VAXstation with the VAXstation or tape drive power on. Failure to comply may result in damage to both the VAXstation busses and the tape drive.
ATTENTION	N'insta lez ou ne retirez jamais de peripheriques lorsque l'equip'nent est sous tension afin d'eviter tout dommage materiel. Assurez vous que tous les peripheriques et l'unite centrale sont hors tension.

	Failure to plug in the streaming tape drive ribbon cable before turn'ng the tape drive power on may result in equ pment failure.
CAUTION	Read the notice on the front of the power entry panel before turn ng on the power to the tape drive. Select the streaming tape drive with the same voltage as the power entry panel outlet or equipment damage may result.
	S vous ne branchez pas le cable-ruban du derouleur de bande en continu avant de mettre le derouleur sous tension, le materiel pourrait faire defaut.
ATTENTION	Veuillez lire l'avertissement figurant a l'avant du panneau d'entree d'alimentation avant d'alimenter le derouleur de bande. Sellectionnez la meme tension pour le derouleur en continu que pour la sortie du panneau de'entre d'alimentation, sinon le material pourrait subir des dommages.

The streaming tape power AC outlet on the OIS power entry panel is a convenience outlet for either 120 or 240 VAC device Check the label on the front of the power entry panel before connecting anything into this outlet

Refer to Section 3 for wiring connections Figure 4 21 shows the power entry panel Note that there are connections are on the back of the power entry panel Access them through the door on the back of the OIS console

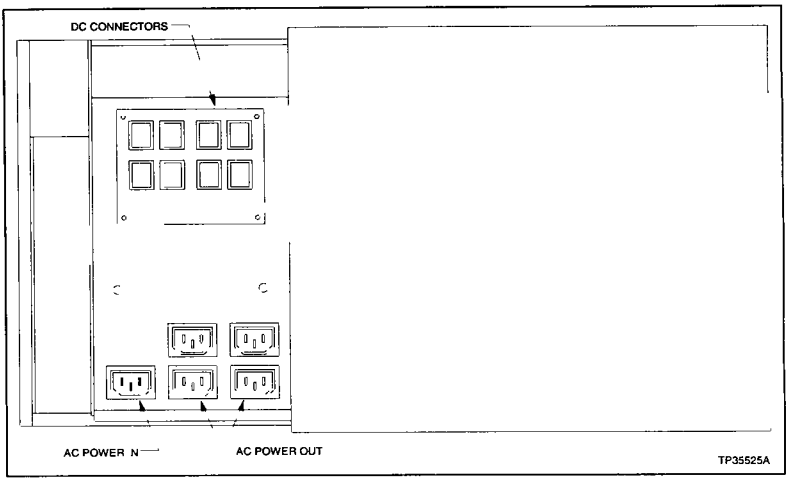


Figure 4 21 IIOIS40A/D Connector Panel for Slide In Power Supply

IIOIS401, IIOIS402 and IIOIS403, and IIOIC4021, IIOIC4022, IIOIC4023 and IIOIC4024 Main Power Supply

Ba ey Part Number 1948564A1 (O S401/2/3 IO C4021/2/3 AC/DC)
Ba ey Part Number - 1948564A2 (IOIS40A/D IIOIC401/3/4 Power-One)

The IIOIS40 and IIOIC40 130 watt main power supply (Figure 4 22) provides power to the console Figure 4 23 shows the connections from the main power supply Table 4 13 lists the powei supply connections to the DC distribution board and the backplane of the multibus card cage in the console. Figure 4 24 shows the connections from the main power supply to the DC distribution board. Figure 4 25 shows the connections from the main power supply to the backplane of the card cage

The DC distribution board is located at the top rear of the supply. Each socket on the DC distribution board is wired identically Any peripheral device using power cable (6638713A1) may be plugged into any socket on this board

NOTE: The AC/DC power supp y in the conso es operates on both 120 vo ts and 240 vo ts When rep ac ng the power supp y check to make sure it is set for the voltage rat ng of the cabinet The Power One supp y s vo tage autosens ng and has no vo tage se ect jumpers

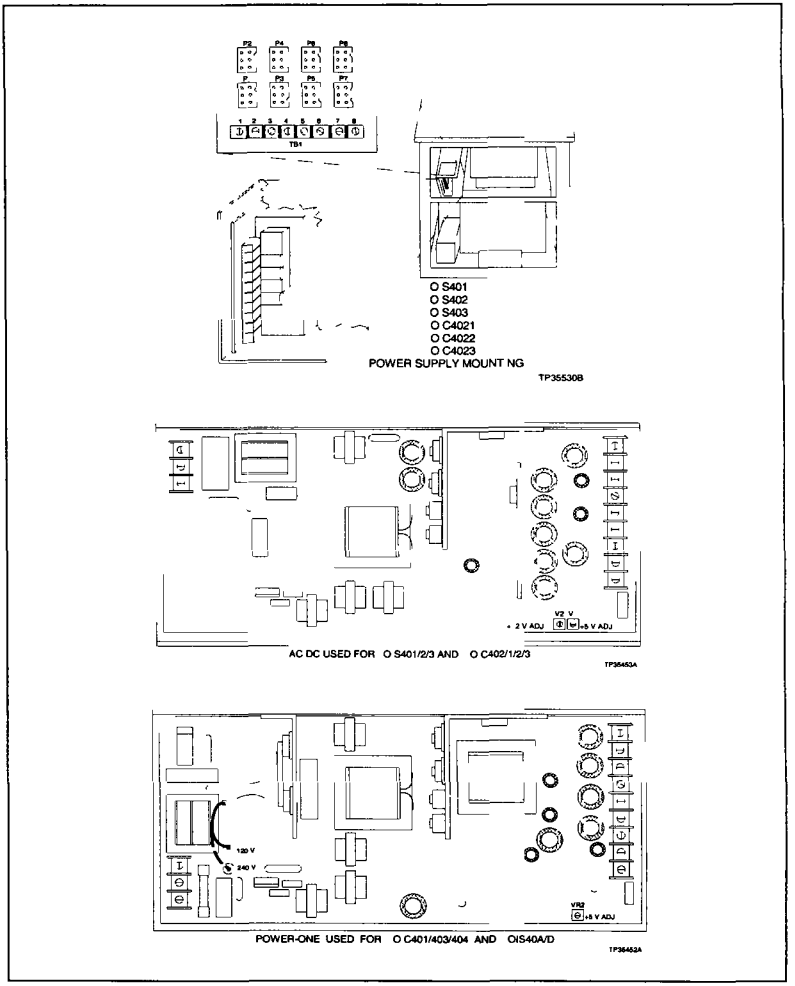


Figure 4 22. IIOIS40 and IIOIC402 Main Power Supply

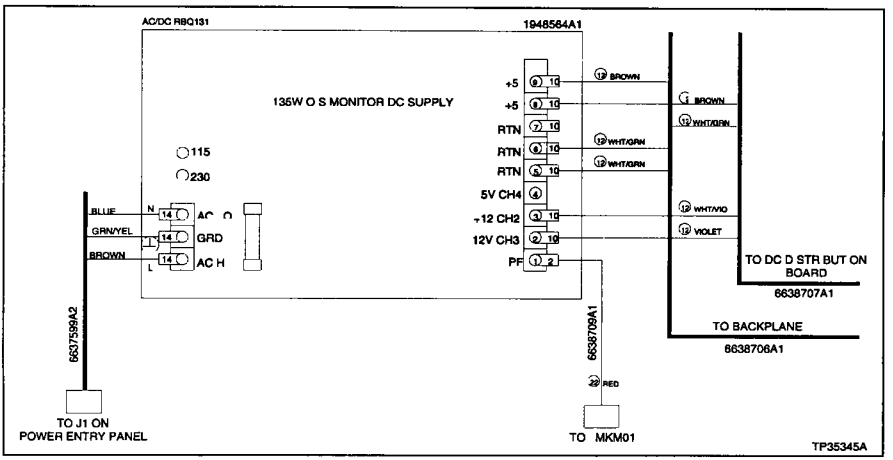


Figure 4 23. IIOIS40 and IIOIC402 Connections from Main Power Supply

Table 4 13 IIOIS40 and IIOIC402 Power Supply Connections

Main Power Supply DC Cable/Wire Connections					
Source			Destination		
W re or Cable Number	From	Terminal	Wire Description	Terminal	To
6638706A1	Ma n power supp y	TB-9 TB 6 TB-5	Brown Wh te/green Wh te/green	TB3 2 TB5 2 TB6 2	Mu t bus backp ane
6638707A1	Ma n power supp y	TB 8 TB 7 TB-3 TB 2	Brown Wh te/green Wh te/v o et V o et	TB 8 TB 6 TB-1 TB 3	Mu t bus backp ane
6638708A1	DC d str but on board	TB-1 TB 3	Wh te/v o et V o et	TB2-3 TB2 2	Mu t bus backp ane
6638709A1	Ma n power supp y	TB 1	Red	P3	MKM02 modu e
6638710A1	Mu t bus backplane	TB5-1	Green/ye low	E1	Power entry panel
6638710A9	DC d str but on board	TB 2	Green/ye ow	TB 8	DC d str but on board

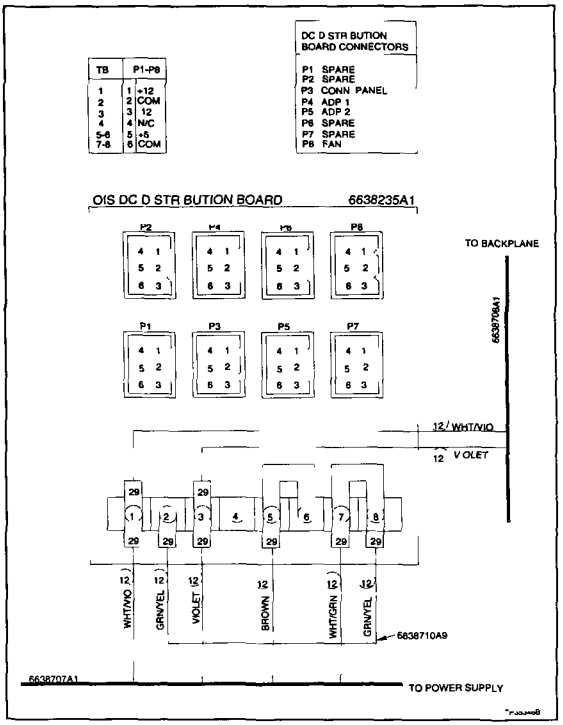


Figure 4 24. IIOIS40 and IIOIC402 Power Connections to DC Distribution Board

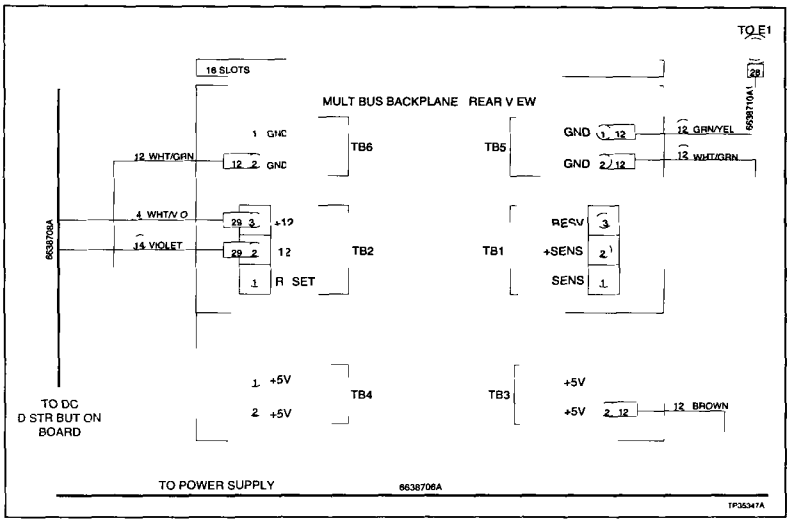


Figure 4 25 IIOIS40 and IIOIC402 Power Connections to Backplane

IIOIS40A and IIOIS40D Slide-In Power Supply

Ba ey Part Number 6639225A1

The IIOIS40A and IIOIS40D slide in power supply is a 135 watt power supply which provides power to all multibus modules and monitors Table 4 14 lists the power supply connections to the DC distribution board and the backplane of the multibus card cage Figure 4 26 shows the connections from the slide in power supply Figure 4 27 shows the con nections from the power supply to the DC distribution board

The DC distribution board is located at the rear of the power supply Each socket on the DC distribution board is wired identically Any peripheral device using power cable (6638713A0) may be plugged into any socket on this board

NOTE Th s power supp y s used n both the 120 vo t and 240 vo t I O S40A and I OIS40D cab net The supp y s autosens ng

Table 4 14 IIOIS40A/D Power Supply Connections

135W Main Power Supply DC Cable/Wire Connections				
Wire/Cable Number	**Source From**	**Terminal**	**Wire Description**	**Destination Terminal**
6638708A1	DC d str but on	TB 1 TB 3	Wh te/v o et V o et	TB2 3 mu t bus TB2 2 backp ane
6638710A2	Ma n P/S	GND stud	Green/ye ow	E1 power entry pane
6638710A3	Ma n P/S	CH2	Wh te/green	CH3 + ma n P/S
6638710A4	Ma n P/S	CH2	Wh te/green	GND stud ma n P/S
6638711A1	Ma n P/S	GND stud	Wh te/green Wh te/green Wh te/green Wh te/green Wh te/green Wh te/green	TB5 2 mu t bus TB5 2 backp ane TB5-1 TB5 1 TB6 1 TB6 2
		+5 V stud	Brown Brown Brown Brown Brown Brown	TB3 2 mult bus TB3-2 backp ane TB3 1 TB3-1 TB4 1 TB4 2
6638712A1	Ma n P/S	J1	Wh te Green	TB1-2 mu t bus TB1 1 backp ane
			Red B ack	P3 MKM02 P3 I MKM02
6638717A1	Ma n P/S	J2		P7 DC d str but on
6638718A1	Ma n P/S	+5 V stud GND stud	Brown White/green Wh te/green	TB 5 DC d str but on TB-2 TB 7
		CH3 - CH2+	V o et Wh te/v olet	TB 3 TB 1

AC Power

Refer to Section 3 for the location of the AC connections for the power entry panel. Figure 4-28 shows the AC wiring inside the power entry panel for IIOIS40, IIOIS40A and IIOIS40D and IIOIC402 console The IIOIC403 console is similar except that it has a transformer and switch for 120 VAC or 240 VAC for the air conditioner IIOIC401 and IIOIC404 console have similar internal AC wiring. The number of AC outlets is different

NOTI Connect the device only to the outlet labeled for that device to prevent possible overloading of the outlet

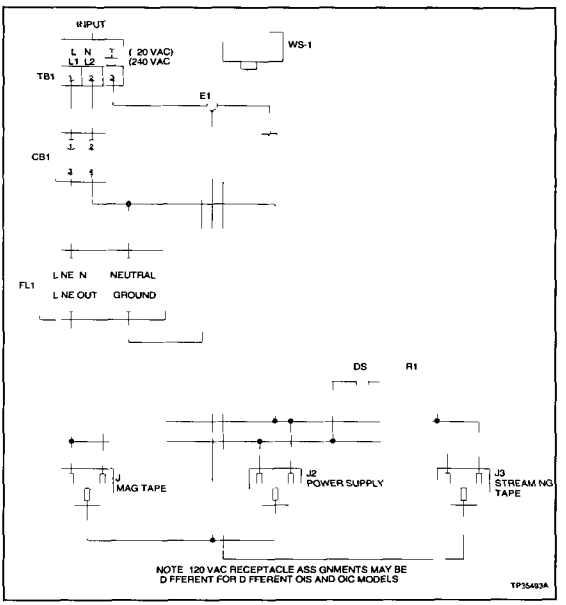


Figure 4-28 IIOIS40 IIOIS40A/D and IIOIC402/3 Power Entry Panel, AC Connections

Printer

Ba ey Nomenc ature - IIPRT02/ IPRT03/I PRT04/ IPRT05

A maximum of four printers may be connected to the IIOIS40 or IIOIS40A and IIOIS40D console Connect the printers to a terminal server on the Ethernet A single printer can connect to the serial port on an IIOIC40 console Refer to the power entry panel in Section 4 for socket placement Plug the printer into the assigned AC receptacle on the back of the power entry panel when connecting the printer to an IIOIS40 console Table 4 15 lists the printers used by the serial interface

NOTE: The l ne cord must have so ated safety ground referenced to the same po nt as the O S e ectron cs safety ground, w thout connec t on to condu t/structura ground AC receptac e must be so ated ground dup ex Pass and Seymour G€200 or equ va ent

Table 4 15 OIS/OIC Printers

Nomenclature	Description
PRT02	B ack and wh te pr nter
IIPRT03	Co or pr nter
PRT04	V deo cop er (co or)
I PRT05	B ack and wh te pr nter (h gh speed)

SETUP

Steps 1 through 5 are for IIPRT02, IIPRT03 and IIPRT05 prnt ers The IIPRT04 printer connections are in the ***Color Video Copier System*** section following this section For more infor mation, refer to the manufacturers documentation

1 Attach one end of a NKMR01 cable to the printer's DB25 serial connector Attach the other end to the OIS power entry panel printer port Tighten the connector hood screws

2 Turn printer power on

3 Press the **ON LINE** button on the printer to get local (Lo) mode

4 Press and hold the **PRG** button on the printer to prnt the current setup.

5 If the setup values in this text do not agree with the printed listing for the XLS or XCQ, change the setup by pressing **1** to **9** to change the entry for that number on the listing and follow the prompts that are printed

GENICOM 3410 XLS

The present configuration is:

```
Firmware 512621 Resolution MED. Printhead 18P
1 Font
Style (507339) DP 400 CPS 2/144
CPI 10 0
Country USA
Mode Normal
2 LFI 6
3 Forms Control
Form Length 11 0
Top Margin 0 0
Bottom Margin 0 0
4 Interface Control
Interface Type Serial
Input buffer length 2048
Interface Straps A
0           1           2           3
123456789   0123456789  0123456789  012
000010000   0001010000  0101000001  000
Interface Straps B
0           1           2           3
123456789   0123456789  0123456789  012
110000000   0000000000  0000000000  000
Speed 9600
Parity None
5 Margin Settings
Left Margin - 0 0
Right Margin 13 6
6 Horizontal Tab Stops
None
7 Vertical Tab Stops
None
8 Printer Control Straps
Printer Straps A
0           1           2           3
123456789   0123456789  0123456789  012
100010001   0110011000  0000010001  000
Printer Straps B
0           1           2           3
123456789   0123456789  0123456789  012
000001000   1000000001  0000010000  000
9 Emulation Mode Genicom ANSI X3 64
Press the number 0 to return to normal operation
To continue modification select 1 through 9
```

GENICOM 3410 XCQ

The present configuration is:

```
Firmware  512623 Resolution MED, Printhead 18P
1  Font
Style  (507339) DP 400 CPS  2/144
CPI  10 0
Country  USA
Mode  Normal
Ribbon Type  Process  4 Color
2  LPI  6
3  Forms Control
Form Length  11 0
Top Margin  0 0
Bottom Margin  0 0
4  Interface Control
Interface Type  Serial
Input buffer length 2048
Interface Straps A
0            1            2            3
123456789  0123456789  0123456789  012
000010000  0001010000  0101000001  000
Interface Straps B
0            1            2            3
123456789  0123456789  0123456789  012
110000000  0000000000  0000000000  000
Speed  9600
Parity  None
5  Margin Settings
Left Margin  0 0
Right Margin  13 6
6  Horizontal Tab Stops
None
7  Vertical Tab Stops
None
8  Printer Control Straps
Printer Straps A
0            1            2            3
123456789  0123456789  0123456789  012
100010001  1110011000  0000010001  000
Printer Straps B
0            1            2            3
123456789  0123456789  0123456789  012
000001000  1001000001  0000010000  000
9  Emulation Mode  Genicom  ANSI X3 64
Press the number 0 to return to normal operation
To continue modification select 1 through 9
```

Color Video Copier

Ba ey Nomenc ature I PRT04

The IIPRT04 copier is used to make a color hard copy of a display on the OIS monitor. Do this by pressing the **COPY** button on the copier. Related products for the IIPRT04 copier are listed in Table 4 16.

Table 4 16 Color Video Copier Related Products

Nomenclature	Description
1948439A1	Co or cop er
1948440A1	V deo processor
6634330N10	Centron cs cab e
6637356A1-25	OIS cab e
1948465A1	Spare nk ro
1948464A1	Spare paper ro
NKMC01 25	RGB cab e assemb y
1945080A4	BNC tee adapter

OPERATION SUMMARY

The two parts to the color video copier are the video processor and the color copier

The video processor captures information from an OIS screen and sends this information to the color copier The video processor has internal memory to store multiple screens to be printed out in the order they were stored

The color copier is the device that makes the actual color copy t takes approximately 45 to 60 seconds to make a color copy of an OIS screen

INSTALLATION

After unpacking both the copier and video processor, place them side by side

Configure Switches

Configure the dipswitches on the rear of the video processor (Figure 4 28) Follow these steps when configuring the dip switches

1 Termination for the red, green and blue video signals should be 75 ohm (S1 1 through S1 6 all down)

The signal levels for the video inputs are 1 volt nominal (S2 1 and S2 2 down)

2 Switch positions S2 3 and S2 4 are for setting the sync These switch positions should be set to sync on the green video input (S2 3 and S2 4 both down)

3 Switch 3 sets the attenuation of our video signals The signal levels for the video inputs are 1 volt nominal, set these switch positions to the high gain settings (S3 1 through S3 6 all down).

Connect RGB Cables

Connect the red, green and blue video signals from the OIS monitor to the video processor with the NKMC01 RGB cable

If an Intecolor or other color monitor is used, use BNC tee adapters to make the connections from the graphics board to the monitor and from the monitor to the video processor To do this, follow these steps

1 Connect the BNC tee adapters (part number 1945080A1) to the red, green and blue connectors on the back of the monitor Make sure the termination switch set to the high impedance setting (nonresistor) Connect the RGB output from the graphics board to one side of the BNC tee adapters

2 Connect one end of the NKMC01 RGB cable assembly to the other side of the BNC tee adapters Connect the other end of the NKMC01 cable to the red, green and blue inputs on the back of the video processor (Figure 4 29)

Connect Color Copier

Connect the video processor to the copier with the Centronics parallel cable (part number 6634330A30N25)

1 Connect one end of the Centronics cable to the signal input on the back of the copier

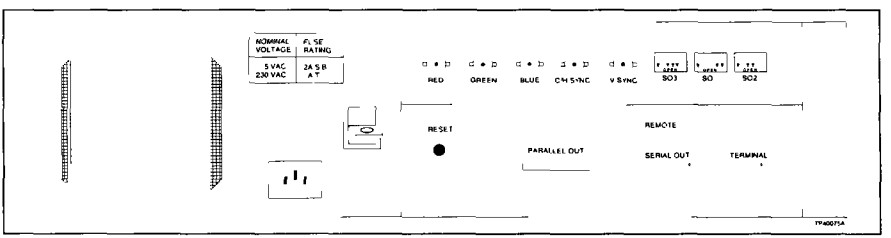


Figure 4 29 Back View of the Color Video Processor

2 Connect the other end of the Centronics cable to the parallel port connector on the back of the video processor.

3 Connect the OIS video processor cable from the remote port of the video processor to the OIS power entry panel relay contact that will be used to start the capture process. Which relay contact will handle this function is user configurable. This relay contact will be controlled by the print command found on the command line menu of the OIS console Bring up this menu by pressing the command line menu key on the OIU keyboard

---

Connect Video Processor

To complete the installation.

1 Connect the DB9 side of the OIS video processor cable to the remote connector on the back of the video processor

2 Connect the 2 lugs on the other end of the cable to the relay contact to perform this function

3 Connect the black wire to the relay terminal labeled C (common) Connect the white wire to the relay terminal la beled NO (normally open)

Operation

To make a copy, press the **COPY** key on the copier The video processor pulls all needed information off the red, green and blue lines of the OIS screen to make a color copy. This takes approximately three seconds

Gammadata Color Video Copier

Ba ley Nomenc ature IPRT04 (A s ze)

The IIPRT04 copier is used to make a color hard copy of a display on the OIS monitor screen. Do this by pressing the up arrow on the copier until the LCD display shows the number of the monitor to be copied and then pressing the **EXE** button on the copier Related products for the IIPRT04 copier are listed in Table 4 17

Table 4 17. Gammadata Color Video Copier Related Products

Nomenclature	Description
1948440A2	V deo processor
6637356A2 xx	O S cab e
1948465A2	Spare nk ro
1948464A2	Spare paper ro
NKMC01 25	RCB cab e assemb y
1945080A4	BNC tee adapter

NOTE XX s cab e engih

OPERATION SUMMARY

There are two main parts to the color video copier system These are the video processor and the color copier

The function of the video processor is to capture all needed information from an OIS screen in a matter of seconds The video processor then sends this information to the color copier This frees up the OIS screen to enable an operator to continue with his work while the color copy is actually being produced The video processor has internal memory to store multiple screens When multiple screens are stored by the video processor, they are printed out one after another in the order in which they were stored

The color copier is the device that makes the actual color copy It takes approximately 45 to 60 seconds to make a color copy of an OIS screen The copier makes three passes over the paper, placing the yellow, red, and blue colors on the paper separately When each screen is printed, the copier aligns itself to make the next copy, at which time the color copy just produced may be torn off at the perforation

INSTALLATION

Unpack the copier with internal video processor See Figure 4 30 There is no voltage select switch

1 Termination for the red, green and blue video signals should be 75 ohm

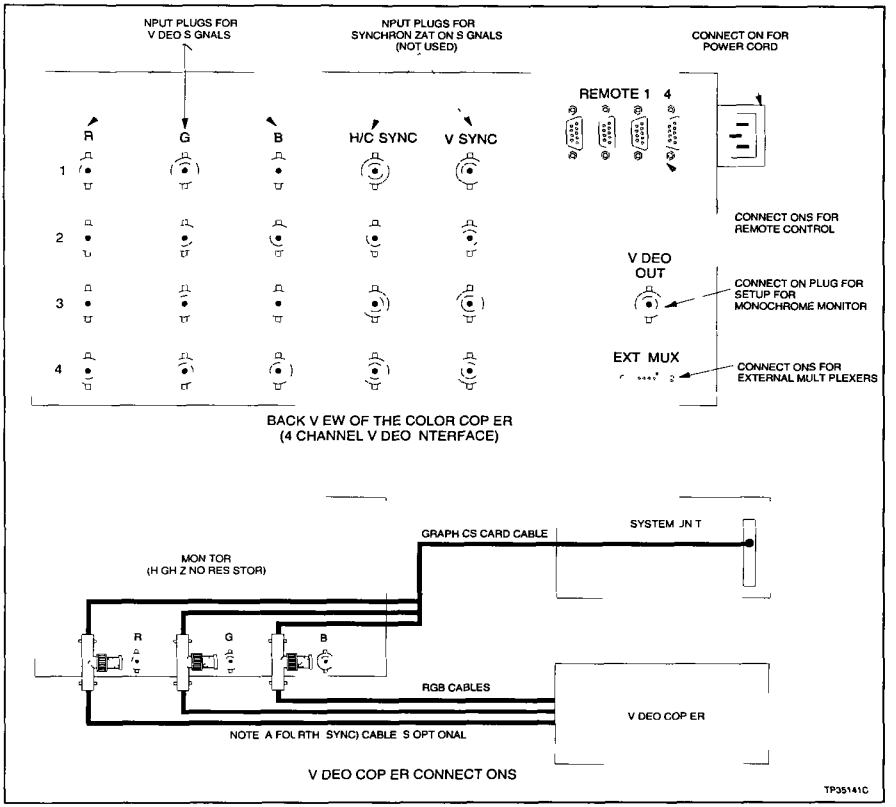


Figure 4 30. Gammadata Color Copier

The signal levels for the video inputs are one volt nominal

2 Set the monitor to sync on the green video input

3 Refer to the setup manual and setup map for the color copier The signal levels for the video inputs are 1 volt nominal.

Connect RGB Cables

Connect the red, green and blue video signals from the OIS monitor to the video processor with the NKMC01 RGB cable

If an Intecolor or Aydin color monitor is used, use BNC tee adapters to make the connections from the graphics board to the monitor and from the monitor to the video processor To do this, follow these steps·

1 Connect the BNC tee adapters (Bailey Controls part number 1945080A1) to the red, green and blue connectors on the back of the monitor Make sure the termination switch set to the high impedance setting (nonresistor). Connect the RGB output from the graphics board to one side of the BNC tee adapters

2 Connect one end of the NKMC01 RGB cable assembly to the other side of the BNC tee adapters Connect the other end of the NKMC01 cable to the red, green and blue inputs on the back of the video processor (Figure 4 30)

OPERATION

Copy a screen by pressing the up arrow on the copier until the LCD display shows the number of the monitor to be copied and then pressing the **EXE** button on the copier A screen capture takes approximately three seconds

The menu structure for the video copier is listed in Figure 4 31

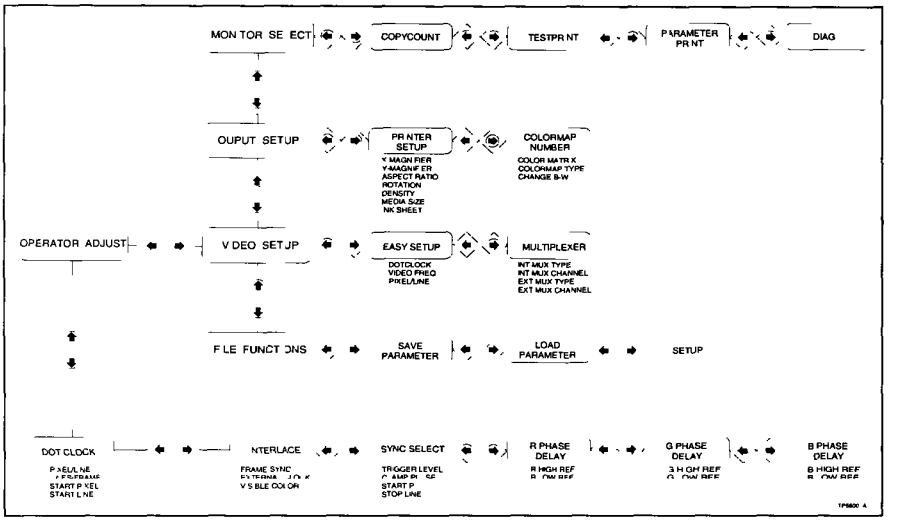


Fig ure 4 31 Video Copier Menu Structure

Streaming Tape Drive

Ba ey Nomenc ature IDST02 (120 V)
DST03 (240 V)

The streaming tape drive peripheral consists of a 94 mega byte cartridge tape drive, interface and power supply The backup or load process takes approximately 40 minutes, depending on the interleave factor The disk controller used by the OIS console also controls the tape drive

	Failure to plug in the streaming tape drive ribbon cable before turning the tape drive power on may result in equipment failure.
CAUTION	**Read the notice on the front of the power entry panel before turning on the power to the tape drive. Select the streaming tape drive with the same voltage as the power entry panel outlet or equipment damage may result.**
	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.
ATTENTION	**Veuillez lire l'avertissement figurant a l'avant du panneau d'entree d'alimentation avant d'alimenter le derouleur de bande. Sellectionnez la meme tension pour le derouleur en continu que pour la sortie du panneau de'entre d'alimentation, sinon le material pourrait subir des dommages.**

See Figure 4 32 to attach the cable between the streaming tape port of the IIOIS40 console and the streaming tape unit D connector receptacle The IIOIS40A and IIOIS40D VAXser ver has a SCSI connector for the D connector of the tape unit cable (see Figure 3 30)

NOTE: Rep ace the term nator cover after d sconnect ng the cab e from the TK50 stream ng tape dr ve

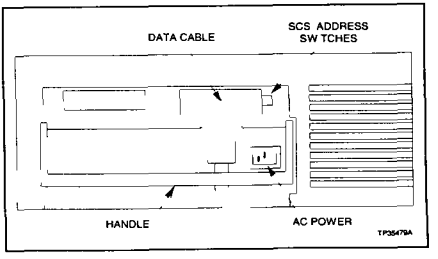


Figure 4 32. Streaming Tape IIDST02/3 Cable Connections

The tape drive unit contains a controller board which is configured by setting jumpers. The jumper settings are factory set and should require no further configuration. To verify the settings, see Table 4-18 and Figure 4-33. Refer to the disk backup procedure in Section 3 to back up the system.

Table 4-18. Streaming Tape Drive SCSI Address Switch Settings

SCSI Address on SCSI-B Bus	Switch Positions		
	1	2	3
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5 (default)	1	0	1
6	1	1	0
7	1	1	1

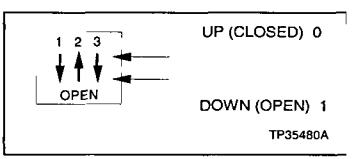


Figure 4-33. SCSI Address Switch Settings

Optical Disk

Ba ey Nomenc ature I DOP05 and DOP06

Two optical disk archiving units are available The IIOIS40A and IIOIS40D cabinet uses the rack mounted IIDOP05 opti cal disk and the IIOIS40 console uses the tabletop IIDOP06 optical disk The RWZ01 optical disk drive is a SCSI compat ible 590 megabyte storage device that reads and writes to removable disks The optical disk has a SCSI terminator built in to allow it to be used as a terminator or intermediate SCSI device Note that next to the eject button is the emergency eject hole for removing disks without power Refer to Table 4 19

Set the SCSI address on poles six, seven, and eight on the dipswitch located on the back of the case with the power switch and cable connections

Be sure the busy indicator is off before ejecting a disk from the disk drive For more information refer to the instruction manual shipped with the disk drive

Table 4 19 Optical Disk Dipswitch Settings

Pole Number	Default	Description
1	On	Auto start up when a d sk s nserted
2	On	A ows manual eject of d sks
3	On	Sets the d sk dr ve as the term nat ng SCSI bus dev ce and supp es power to the SCS term nator
4	Off	Set to on f the d sk dr ve s the term nat ng dev ce on the SCS bus
5	On	Must be set to on t enab es par ty check ng
6 7 8	1	SCS address se ect B nary format w th po e e ght the east s gn f cant b t Set the address to one

Color Screen Copy Printer

Ba ey Nomenc ature I PRT06

The IIPRT06 printer is a DEC model LJ250 printer that makes a color hard copy of a display on the OIS screen It is an ink jet dot matrix printer that is capable of bidirectional printing in text mode for greater printing speed Note that the ink cartridge is a consumable item and must be replaced periodically The printer connects through an asynchronous serial interface at 9600 baud

In text mode the printer prints 10 pitch Courier characters at 90 characters per second In sixel graphic mode the printer prints 16 7 inches per second at 180 dots per inch Refer to the vendor documentation for color mapping information The printer also makes transparencies Note that transparencies require two passes of the printhead

Related products for the IIPRT06 printer are listed in the ***LJ250/LJ252 Companion Color Printer User's Guide*** shipped with the printer Refer to this manual for the part numbers for the ink cartridges, film, and replacement parts for the printer This manual also contains more information on the printer

OPERATION SUMMARY

After the printer is turned on it sends an **XON** character to the computer to request data When the input buffer fills to 2432 characters, the printer sends an **XOFF** character to stop the computer from sending any more data A second **XOFF** character is sent if the computer does not receive the first **XOFF** and the buffer fills to 2496 characters

The printer continues to process the characters and empty the buffer When the input buffer drops to 2304 characters, the printer sends an **XON** character to request data from the computer The input buffer can hold 2560 characters without losing data The printer prints a reverse question mark (**SUB** character) if data is lost due to an overflow parity or framing error

Data moves from the input buffer to the print buffer and is printed when one of these conditions occur

- A line terminator character (**LF, FF, VT, CR** or any control function that causes vertical motion) is received
- In text mode, the auto wrap feature is set and printing occurs beyond the right margin.
- In text mode, the printer has not received data for 500 m lliseconds

INSTALLATION

Printer installation consists of configuring the switches and connecting cables Refer to vendor documentation for more information.

NOTE ***Do not*** use isopropyl alcoho on on the p aten Clean the p aten w th a damp cloth C ean ng the w p ng pad s not necessary

Configure Switches

Configure the dipswitch on the rear of the printer shown in Figure 4 34 Figure 4 35 shows the dipswitch settings Cycle off the power to the printer after configuring the dipswitch The switch is read at power on

NOTE Set the baud rate at the same speed as the computer

Connect Cables

Connect the power and communication cables at the back of the printer Connect the power cable into a local AC outlet Connect the communication cable into a port on the DECserver

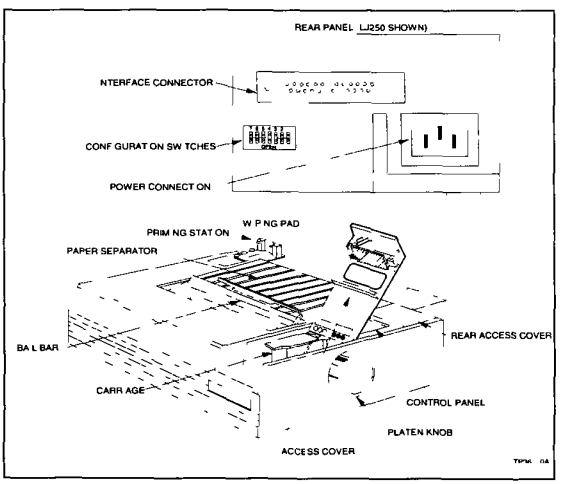


Figure 4 34 LJ250 Printer

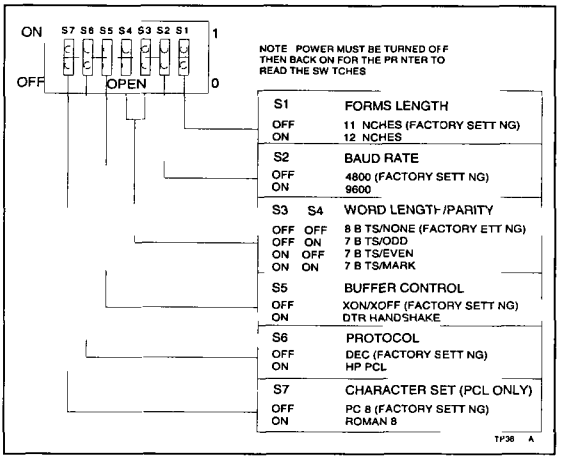


Figure 4 35 LJ250 Printer Dipswitch Settings

Operation

Use the buttons and indicators on the control panel to operate the printer Figure 4 36 shows the buttons and indicators Table 4 20 describes the buttons and indicators For more information refer to the vendor documentation To print text or sixel graphics

1 Load the print media

NOTE. The ba bar must be c osed aga nst the med a before app y ng power

2 Press the **POWER** button on the control panel The green power indicator lights

3 Verify the protocol on the protocol/ready indicator (on DEC protocol and off PCL protocol)

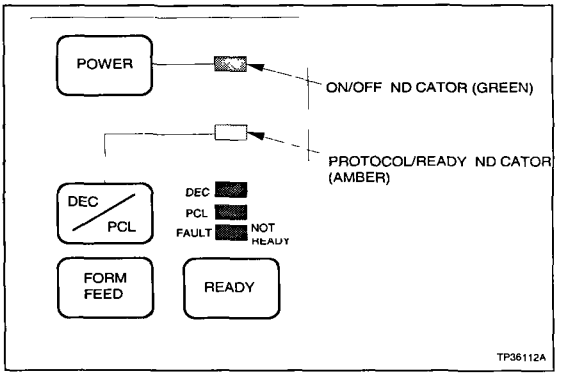


Figure 4 36 LJ250 Printer Operating Controls and Indicators

Table 4 20 LJ250 Printer Operating Controls and Indicators

Control or Indicator	Description
POWER	Starts up the printer
On/off (green)	When on nd cates that the printer s started
READY	The printer powers up n the ready mode Press ng **READY** dese ects the printer Ver fy that the ba bar s c osed before press ng **READY** to p ace the printer back on ne
DEC/PCL	Se ects the printer protoco The protoco / ready nd cator nd cates the se ected protoco
Protoco / ready (amber)	On printer ready (DEC protoco) Off printer ready (PCL protoco) F ash ng out of paper Printer dese ected, hardware error detected by se f test at power up (refer to the vendor documentat on)
FORM FEED	Advances the paper n the printer one form length at a t me

Color Screen Copy Printer

Ba ey Nomenc ature PRT07

The IIPRT07 printer is a DEC model LF01 printer that makes a color hard copy of a display on the OIS screen It is a color, thermal transfer, postscript printer The printer connects through an asynchronous serial interface at 9600 baud

The printer prints 35 resident typefaces at 300 dots per inch in black, three color or four colors, depending on the ribbon used The printer also makes transparencies Figure 4 37 shows the printer

Related products for the IIPRT07 printer are listed in the ***Colormate PS User's Guide*** shipped with the printer Refer to this manual for the part numbers for the ink cartridges, film, and replacement parts for the printer This manual also contains more information on the printer

INSTALLATION

Printer installation consists of configuring the printer through the menu and connecting cables Refer to vendor documentation for more information

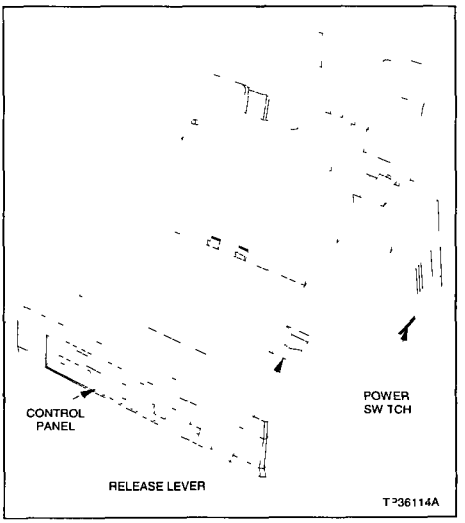


Figure 4 37 LF01 Printer

Connect Cables

Connect the power and communication cables at the back of the printer shown in Figure 4 38 Connect the power cable into a local AC outlet. Connect the RS 232C communication cable into a port on the DECserver.

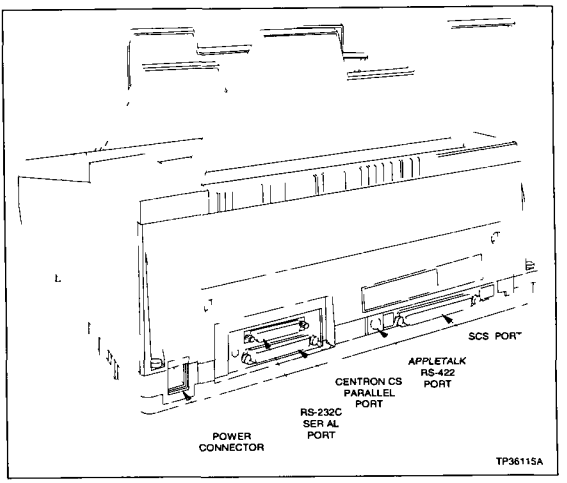


Figure 4 38 LF01 Printer Back View

Operation

Use the buttons and indicators on the control panel to operate the printer Figure 4 39 shows the buttons and indicators Table 4 21 describes the buttons and indicators Figure 4 40 shows the menu structure of the printer

For more information refer to the vendor documentation

1 Load the print media

NOTE The bar must be closed against the media before applying power

2 Press the power button on the control panel The green power indicator lights

3 Verify that the on line indicator is on

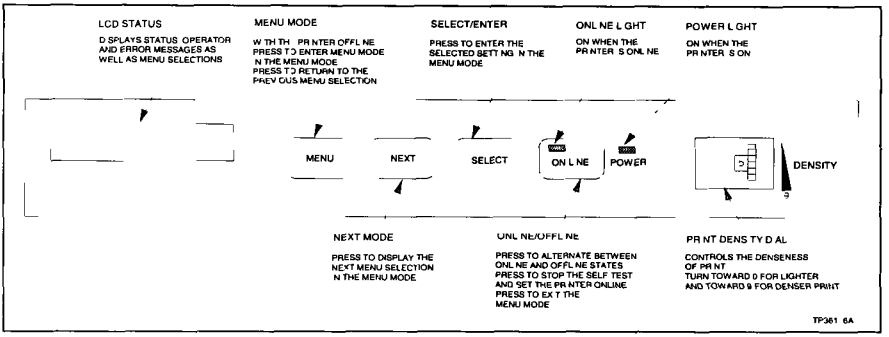


Figure 4 39 LF01 Printer Operating Controls and Indicators

Table 4 21 LF01 Menu Description

Control	Factory Setting	Description
User 1 2 and 3	User 1	Selects user 1, 2, or 3 defined parameter settings
Reset		Sets all menu selections to the previous settings
Interface	Centronics	Selects hardware interface used
Baud rate	9600	Sets baud rate for RS 232 C or RS 422
Flow control	XON/XOFF	Selects communication protocol for RS 232 C or RS 422
Parity	Even	Selects parity checking for RS 232 C or RS 422
Data bits	7 bits	Selects word length for RS 232 C or RS 422
Stop bits	1 stop bit	Selects number of stop bits for RS 232 C or RS 422
Configuration	Start page	Sets start page and page size
Start page	On	At power up this prints the total number of pages printed engineering firmware revision even hard disk status and hardware /software interface
Page size	Letter	Selects letter A4, or legal size paper
Set wait time	40 seconds	Waits time between jobs (normally 40 seconds)
Do first job	First job on	After powering on with first job enabled the printer checks the external hard disk for a file named SYS/START If present the file contents are printed as the first job If not present the printer waits for the first job to be sent through the selected printer interface
Mode	Postscript	Selects printer mode hex character postscript
Hex mode		Data sprinted in hexadecimal
Character mode		A typethrough feature allowing ASCII characters to be typed through the keyboard to the printer

Table 4 21 LF01 Menu Description (continued)

Control	Factory Setting	Description
Postscr pt		A page descr pt on language that d rects the pr nter to p ace text and graph cs at any locat on on the page and n any s ze or ang e Postscr pt compat b e software hand es the pr nt ng commands
Test pr nt		Test pages 0 through 3 pr nt spec f cat ons as we as co or and monochrome shad ng tests

Changing Menu Selections

To change a menu setting, follow these steps

1 Press **ON LINE** until the on line light is off

2 Press **MENU**. The message *USER 1* appears on the display

3 Press **NEXT** until the desired selection appears, then press **SELECT**. Note that an asterisk appears next to the selected item

4 Press **NEXT** again to display the next level of selections

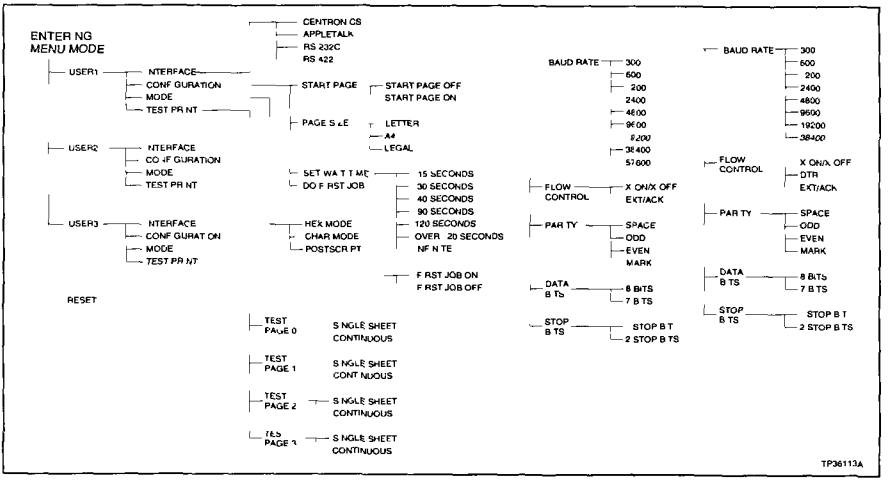


Figure 4 40 LF01 Printer Menu Structure

5 Press **NEXT** until the desired selection appears. then press **SELECT**. An asterisk appears next to the selected item

6 Repeat Step 5 until all selections have been made

7 Press **ON LINE** to exit to the menu mode. Note that you have to press **ON LINE** before turning off the printer in order to save new selections

SECTION 5 - TROUBLESHOOTING

INTRODUCTION

This section explains how to troubleshoot the IIOIS40 and IIOIC40 consoles. It contains a troubleshooting table, failure LED codes, and techniques for gathering information on software faults

Replace components by following the procedures in Sec tion 7 Refer to information in Section 4 when replacing parts. Review specific adjustments associated with replace able parts before returning the system to normal operation. Close and secure cabinet doors after troubleshooting or re placing parts in the IIOIS40 and IIOIC40 consoles before returning the system to normal operation

Be sure to follow all warnings, cautions and notes Put cir cuit 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 adjust ments should be performed by qualified personnel

TROUBLESHOOTING

The IIOIS40 and IIOIC40 consoles are shipped ready for operation After completing the instructions given in Section 3, prepare the unit for service. The troubleshooting guide in Table 5 1 helps identify problems and suggest solutions

Table 5 1. Troubleshooting Guide

Symptom	Possible Problem or Solution
No power nd cator on c rcu t	No AC power at OIS conso e Check AC w r ng on nput Check AC on power entry pane Check breaker l ght on power entry pane Check fuse on power supp y
Breaker off but nd cator on	Check breaker contacts Check breaker w r ng Check AC input w r ng
Improper/ ncomp ete start up	See d agnost c message at start up for poss b e prob ems Refer to the ***VAXstation Customer Hardware Information Manual*** sh pped w th the OIS and O C conso e

Table 5 1 Troubleshooting Guide (continued)

Symptom	Possible Problem or Solution
Start up OK but no N U response	Check NIU sett ngs (checksum on port A at 19 2 kbyte) Check NIU cables Try us ng N U d agnost c port to test I MCL01 IIMLM01, IIMCP01 and IIMCP02 modu es (refer to ***NIU Test*** in this sect on)
Start up OK but no keyboard response	Check keyboard ass gnment Check a cab es Check caps lock pos t on Check IMKM02 modu e seat ng anc jumpers Check OIS configurat on (keyboards/printers)
Start up OK but no mon tor p cture	Check mon tor AC power Check mon tor fuse Check RGB cables Check mon tor sw tches (sync on green) Check 75 Ω term nat on Check br ghtness and contrast contro s
No printer response	Check AC power Check cab es Check pr nter setup Check O S conf gurat on (pr nters)

DIAGNOSTIC POWER UP TESTS

If the troubleshooting guide fails to identify a problem in the OIS or OIC console, follow the AC and DC power test proce dures For tabletop models, refer to the manufacturers documentation Check the IIOIC403 DC voltages on the DC distribution board and the AC voltages at the line input to the power entry panel

AC Power Test

NOTE When the nstruct ons state to app y power to the O S and OIC console switch the ma n breaker to the ON pos t on To turn off the power sw tch the ma n c rcu t breaker to the OFF pos t on

1 Turn off power to the OIS and OIC console Disconnect AC power to all equipment inside the console by unplugging the line cords from the back of the power entry panel

2 Apply power to the OIS and OIC console by switching on the line circuit breaker located at the front of the power entry panel

3 Use a digital voltmeter to measure the AC power at each of the outlets (J1 through J4) on the power entry panel The line voltage should be 102 to 132 VAC RMS for a 120 VAC input and 224 to 252 VAC for a 240 VAC input Refer to the ***Site Planning and Preparation*** manual for specific AC voltages

4 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 4

5 Turn off the power to the OIS and OIC console Verify that it removes power from all outlets

6 Plug the color monitor power cord into the AC socket in the rear of the power entry panel ***Do not*** plug in the main power supply yet Apply power to the OIS and OIC console Nothing will be displayed on the color monitor until the system software is loaded

DC Power Test

Necessary test equipment consists of a digital voltmeter

1 Turn off power to the OIS and OIC console

NOTE ***Do not*** disconnect the power wiring from the multibus card cage

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

NOTE: Turn power off before removing or inserting multibus modules

3 Unplug all multibus modules from the card cage The modules do not have to be pulled all the way out Pull them out only a few inches from the module edge connectors

4 Plug the power line cord for the power supply into the power entry panel

5 Ensure that ***all*** power supply wiring is correct Refer to Section 4

6 Apply power to the OIS and OIC console

7 Measure the DC voltages at the multibus card cage back plane Refer to Section 4 for the location of the terminal blocks to measure the backplane voltages

8 If necessary, adjust the DC voltages at the power supply (Figure 5 1)

Adjust the voltages to +0 25 VDC and 0 0 VDC of the following values, if needed A final adjustment will be made later with the

power supply under load Measure the +5.00 VDC, +12.00 VDC, and 12.00 VDC at the rear of the multibus backplane.

NOTES:

1 Unstable operation may result if the power supply voltages are not in tolerance

2 ***Do not*** adjust the OL and OVP settings These adjustments are factory set

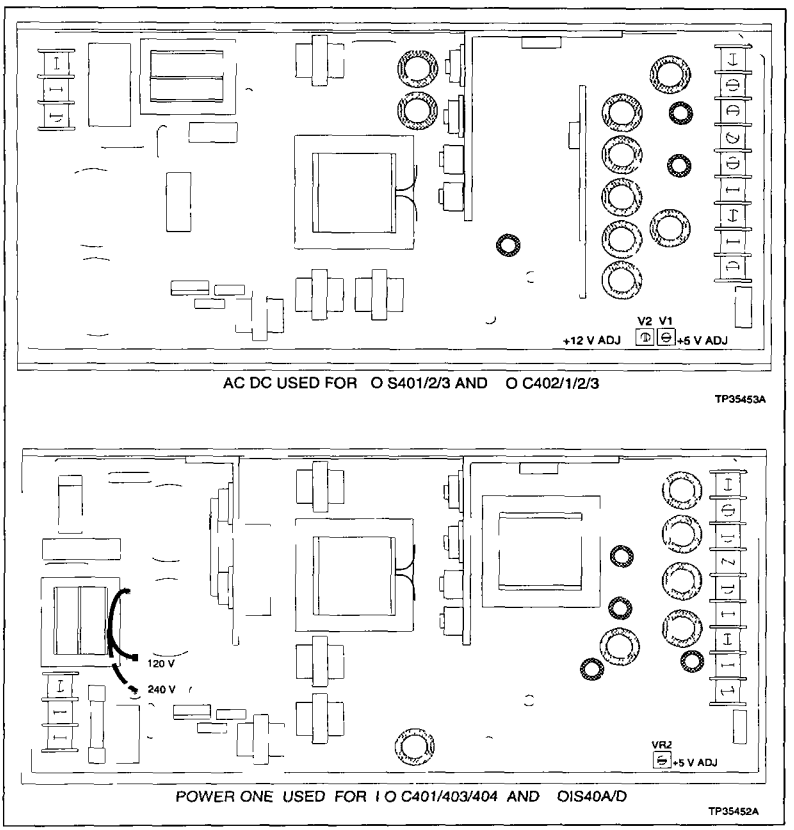


Figure 5 1 IIOIS40 and IIOIC40 Main Power Supplies

9 Turn off the power to the OIS and OIC console Plug in all multibus modules.

10 Reconnect all DC power distribution cables

11. Apply power to the OIS and OIC console and check the DC voltage levels again Adjust the power supply to obtain the voltage within a tolerance of +0.05 volts.

Figure 5 1 shows the IIOIS40 and IIOIC40 main power supply.

DIAGNOSTIC LEDS

If the troubleshooting guide fails to identify a problem in the OIS and OIC console, follow the procedures in the vendor documentation For tabletop models, refer to the manufac turers documentation Check the IIOIC403 DC voltages on the DC distribution board and the AC voltages at the line input to the power entry panel.

Table 5 2 lists the IIMCP01 failure LED codes Table 5-3 lists the IIMLM01 failure LED codes.

Table 5 2 IIMCP01 Failure LED Codes

MCP Code	LED Number (Top LED / Bottom LED) 8 7 6 5 4 3 2 1	Error Condition
12	0 0 0 1 0 0 1 0	MLM modu e not respond ng to MCP commands
13	0 0 0 1 0 0 1 1	ROM checksum error (socket U23 or U24)
14	0 0 0 1 0 1 0 0	Expander bus message fa ure
15	0 0 0 1 0 1 0 1	Loop fa ure check for break n c rc t
16	0 0 0 1 0 1 1 0	MLM oop back test fa ure
21	0 0 1 0 x x x x	nterna software error
31	0 0 1 1 0 0 0 1	Memory or CPU fai ure
32	0 0 1 1 0 0 1 0	Address or bus error
33	0 0 1 1 0 0 1 1	egal nstruct on
35	0 0 1 1 0 1 0 1	Spur ous except on
36	0 0 1 1 0 1 1 0	D vide by 0/check/format error
38	0 0 1 1 1 0 0 0	MLM modu e not conf gured for MCP operat on (MLM sw tch 2, pole 1 needs to be ON)
39	0 0 1 1 1 0 0 1	Dup cate node number on oop (MLM sw tch 4)
3E	0 0 1 1 1 1 1 0	MLM to MCP handshake fa ure
3F	0 0 1 1 1 1 1 1	Stop pushbutton actuated

NOTE The LED represent ng the least s gn f cant b t s the bottom LED on the MCP modu e and on the MLM modu e

Table 5 3. IIMLM01 Failure LED Codes

MLM Code	LED Number: Top LED / Bottom LED (8 7 6 5 4 3 2 1)	Error Condition
13	0 0 0 1 0 0 1 1	ROM checksum error (socket U23 or U24)
31	0 0 1 1 0 0 0 1	Memory or CPU fa ure
32	0 0 1 1 0 0 1 0	Address or bus error
33	0 0 1 1 0 0 1 1	egal nstruct on
34	0 0 1 1 0 1 0 0	Trace or pr v ege v o at or
35	0 0 1 1 0 1 0 1	Spur ous except on
36	0 0 1 1 0 1 1 0	D v de by 0 or check or format error
37	0 0 1 1 0 1 1 1	Any trap nstruct on
38	0 0 1 1 1 0 0 0	MLM modu e not conf gured for MCP operat on (MLM sw tch 2 po e 1 needs to be ON)
3E	0 0 1 1 1 1 1 0	MLM to host handshake fa ure

NIU TEST UTILITY

An off line NIU test allows restarting the NIU and testing loop communications This may be required if there is a problem bringing the OIS on line, and NIU module or loop problem is suspected

NOTE. Care shou d be taken when us ng th s ut ty as t causes an NIU restart f the NIU modu e s restarted wh e the O S conso e is on ne, norma O S operat on s nterrupted

To access the utility, open a DECterm window and type **CIU TEST** at the dollar sign *$* prompt, and press Return

After specifying the loop type to which the OIS console con nects, a menu of NIU console commands appears The commands allow resetting the NIU module, testing loop com munications through the *Demand Module Status* command or querying the NIU module for additional information about itself To further isolate the problem, run the Talk 90 utility from the diagnostic port on the IIMCP01 module Refer to the procedure in this section.

NIU (Talk 90) Diagnostic Test

If the network interface unit (NIU) fails to come on line, the problem may be in the NIU module or OIS console The Talk 90 utility can isolate the problem Check the labels on proms U23 and U24 on the IIMCP01 module If the label is IIIST01 module, the module connects to an INFI NET com munication loop. If the label is IIPST01 module, the module connects to a Plant Loop communication loop

Connect a 9 pin to 25 pin D connector serial cable (NKMR02A10 cable or equivalent) between a dumb terminal and connector port B (bottom port) on the IIMCP01 module Set the terminal to 9600 baud and 8 data, 1 stop, 0 start and no parity bits

Follow these steps

1 Press the lower red button on the MCP module (reset)

The diagnostic menu will appear on the terminal

2 Select Talk 90 by typing **1** and pressing Return

3 Select **19** (*CIU RESTART*) from the menu and press Return

4 Answer the prompts

Key	**0** Return
Watchdog	**0** Return
Options	**10** (for Plant Loop) or **255** (for INFI NET) Return
Reply Delay	**0** Return
Interrupt	**0** Return

5 Check that the top row of LEDs on the MCP module will turn on solid, then off The green light on the MCL module will turn off, then on (off line to the loop, then on line to the loop)

6 On the terminal, enter a **1** to return to Talk 90 again

7 Check that the terminal displays a response of *0 errors* The terminal will also display the node address

No errors indicates that the problem is in the OIS console or in the cable between the OIS console and the NIU module

Any indicated errors show that the problem is in the NIU module Substitute modules and run the test again to isolate the problem to the MCP, MCL or MLM module

NOTES

1 A message referr ng to the L S modu e nd cates a prob em on the I MLM01 modu e

2 A message referr ng to the SSM modu e nd cates a prob em on the I MCP01 modu e

SOFTWARE TROUBLESHOOTING

If the OIS console does not respond or stops during an operation, follow these steps to gather the nformation needed to correct the condition.

1. Bring up a DECterm window on the OIS screen. If this is not possible, reset the OIS console, log into the OIS account, then bring up a DECterm window.

2 From the DECterm window, copy any crash logs to a floppy or TK50 magnetic tape archive storage The log files are in [DATA MSG] For example

```
INIT/DENSITY=DOUBLE $FLOPPY FLOPPY

MOUNT $FLOPPY FLOPPY

CREATE/DIR $FLOPPY:[DATA.MSG]

COPY OIS$DISK:[DATA.MSG]*.LOG $FLOPPY: [DATA MSG]

DISMOUNT $FLOPPY
```

3 Copy the IIOIS40 log file to a floppy or TK50, the floppy is located in [DATA USN03] For example

```
MOUNT $FLOPPY FLOPPY

CREATE/DIR $FLOPPY:[DATA.USN03]

COPY OIS$DISK:[DATA.USN03]* TX $FLOPPY: [DATA USN03]

DISMOUNT $FLOPPY
```

4 If it was not necessary to reset the OIS console, run the ACTMON utility and record the current memory pool utiliza tion numbers (press **N** or **n** from the main ACTMON screen)

5 Include a complete description of the system activity when the hang or crash occurred For example, what opera tions were in progress? Does a certain key sequence cause the condition?

SECTION 6 - MAINTENANCE

INTRODUCTION

This section contains a preventive maintenance schedule for the OIS and OIC consoles

Be sure to follow all warnings, cautions and notes Put 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

PREVENTIVE MAINTENANCE

Refer to Table 6 1 for suggested preventive maintenance procedures Specific steps to do these procedures are found in the vendor information supplied with the unit

Table 6 1. OIS/OIC Pre ventive Maintenance

Component	Frequency	
	Monthly	Every Three Months
F oppy disk dr ve		C lean nspect and check alignment [1]
Pr nter	Inspect, c ean and lubr cate	Adjust pr nter per manufacturers instruct ons [1]
Fan assemb y	C ean f ter	R nse f ter w th water b ow dry and re nsta Rep ace f ters annua ly
	Be sure fan is turning	W pe dust off fan b ades
Power supp es	–	C heck power supp y output Adjust power supply if needed (***DC Power Test*** n Sect on 5)
A arm and display LEDs	–	Test LEDs

NOTE
1 Adjust the f oppy d sk drive and printer us ng the procedure n the manufacturers documenta tion C ean the f oppy drive and printer accord ng to manufacturer nstructions

SECTION 7 - REPAIR/REPLACEMENT PROCEDURES

INTRODUCTION

This section explains how to replace multibus card cage modules and the units in the IIOIS40 and IIOIC40 operator interface station There are no special tools required

MODULE REPLACEMENT

If a module in the multibus card cage is faulty, replace it with a new one ***DO NOT*** try to repair the module Replacing components may affect the module performance This procedure explains how to remove a module from an IIOIS40 and IIOIC402 console and an IIOIS40A and IIOIS40D cabinet

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

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

2 To unseat a module, carefully lift the card removal tabs shown in Figure 7 1

3 Carefully slide the module out of the multibus card cage Be sure not to loosen cables from the modules next to the one being removed

4 Configure the replacement module switch and jumper settings Be sure they are set the same as the original module

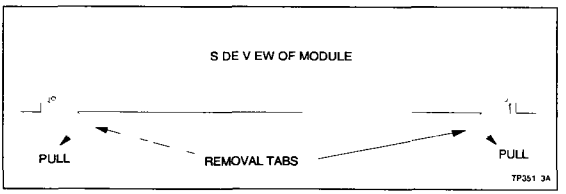


Figure 7 1 Multibus Module Removal

5 In the same slot assignment as the original module, align the replacement module beneath the slot number on the guide rail in the multibus card cage.

6. Insert the multibus modules into the upper and lower guide rails Carefully slide the module in until the front panel is flush with the top and bottom of the multibus card cage frame Press on the module removal tabs shown in Figure 7 1 to fully insert the module into the multibus card cage backplane.

7 Close and secure the cabinet door Return to normal operation

Color Monitor for IIOIS40 and IIOIC402 Consoles

Ea ey Part Number - 1948623A3

See Figure 7 2 when using this procedure Refer to the manufacturers' documentation for IIOIC40 tabletop models

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

2. In the front of the cabinet above the card cage, remove the air plenum (6638577A1) filter assembly by removing the 4 screws on the front Slide the assembly out the front of the cabinet

3 In the front of the cabinet of some models, above the card cage, remove the two $^{7}/_{16}$ inch bolts under the monitor shelf that hold the front of the monitor mounting tray to the cabinet Later consoles do not have these bolts

4. 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.

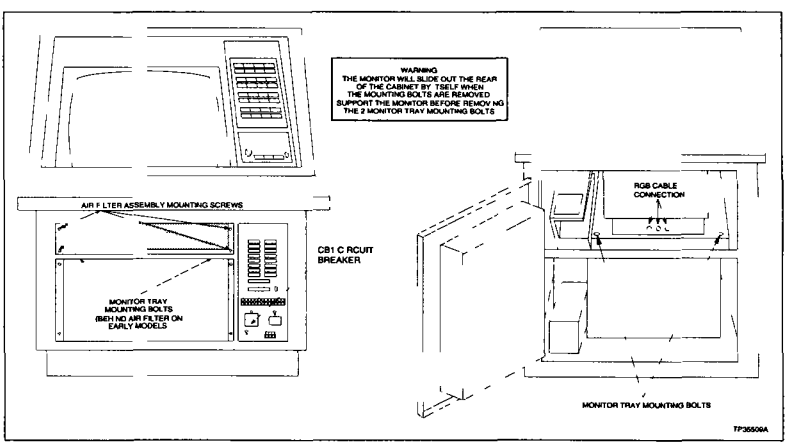


Figure 7 2. Color Monitor Removal for IIOIS40/IIOIC402 Consoles

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	**Lorsque les boulons d'ancrage sont retires, l'ecran cathodique risque de sortir a l'arrier de l'armoire. L'ecran pese environ 27 kilograms (60 pounds) et pourrait blesser quelqu'un si on le laisse sortir de l'armoire. Assurez-vous de retenir l'ecran avant de retirer les deux boulons d'ancrange arrier.**

5 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.

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

7 Protect the screen of the monitor and set the monitor screen down on the protected surface

8 Remove the monitor from the mounting tray by removing the 4 screws under the tray

Color Monitor for IIOIC403 Console

Ba ey Part Number 1948623A3

See Figure 7 3 when using this procedure Refer to the manufacturers' documentation for IIOIC40 tabletop models

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 Open the rear door above the air conditioner Remove the 2 screws fastening the monitor mounting tray to the support rails

3 Slide the monitor out of the cabinet. The monitor weighs about 27 kilograms (60 pounds) Be sure it is well supported

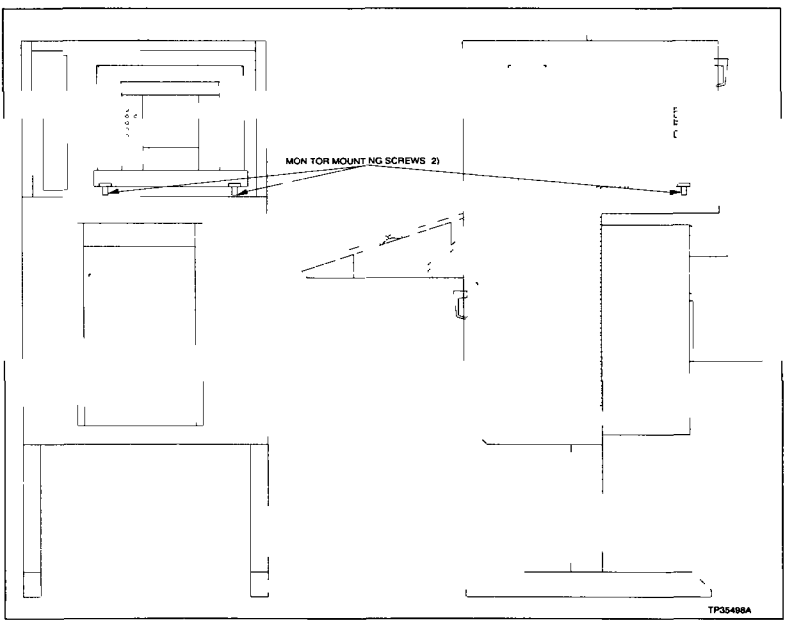


Figure 7 3 Color Monitor Removal for IIOIC403 Console

Fan Assembly for IIOIS40 and IIOIC402 Consoles

Ba ey Part Number 1947419A7
A r F ter 1990006A1

See Figure 7 4 when using this procedure.

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

2 In the rear of the cabinet, cut and remove cable ties securing the fan assembly power cord Fan assembly 1 is removed in Step 3 and fan assembly 2 is removed in Step 4.

3 Fan assembly 1 (located under multibus card cage slots 1 8) In the rear of the cabinet, remove the 2 screws on either side of the fan assembly and slide the fan assembly out

4 Fan assembly 2 (located under multibus card cage slots 9 16) In the rear of the cabinet, remove the hard disk as described previously in this section and fan assembly 1 as described in Step 3

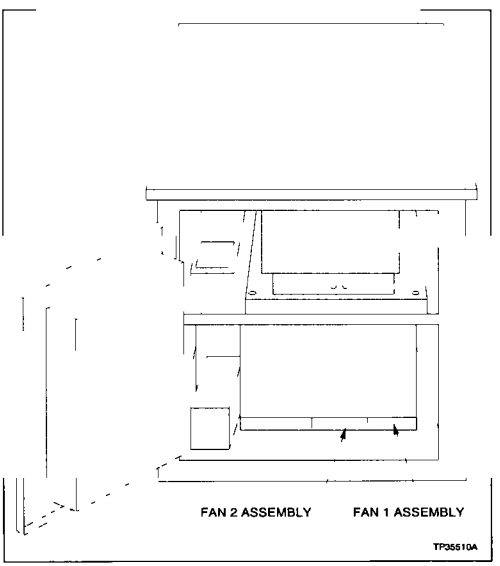


Figure 7 4. Fan Assembly Removal for IIOIS40/IIOIC402 Consoles

Remove the 2 screws on either side of the fan assembly and slide the fan assembly out to the right around the hard disk mounting bracket.

5 Disassemble the fan subassembly by removing the 4 long screws.

NOTES:

1 Be sure the arrow on the fan be ng nsta ed po nts n the d rec tion of the air flow The fan b ows downward pu ng a r out of the modu e card cage through the bottom

2 Be sure the red str ped conductor of the power cord s connected to the pos t ve (+) termina of the fan

Fan Assembly for IIOIS40A Cabinet

Ba ey Part Number - 1947419A7
A r F ter - 1990006A1

See Figure 7 5 when using this procedure.

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

2 In the rear of the cabinet, cut and remove cable ties securing the fan assembly power cord Fan assembly 1 is removed in Step 3 and fan assembly 2 is removed in Step 4.

3 Fan assembly 1 (located under multibus card cage slots 1 8) In the rear of the cabinet, remove the 2 screws on either side of the fan assembly and slide the fan assembly out

4 Remove the 2 screws on either side of the fan assembly and slide the fan assembly out

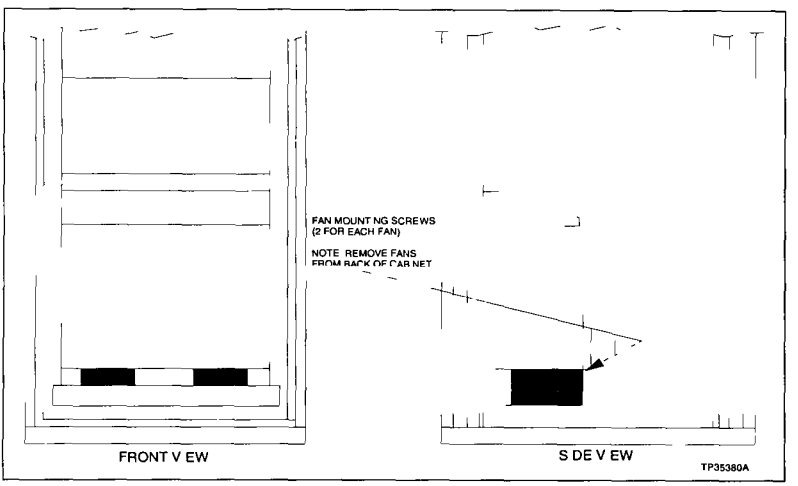


Figure 7 5 Fan Assembly Removal for IIOIS40A Cabinet

5 Disassemble the fan subassembly by removing the 4 long screws

NOTES.

1 Be sure the arrow on the fan be ng insta ed po nts n the d rect on of the a r flow The fan blows downward pu ng a r out of the modu e card cage through the bottom

2 Be sure the red str ped conductor of the power cord s connected to the pos t ve (+) term na of the fan

Keyboard Connector Panel and Floppy Disk Drive for IIOIS401, IIOIS402, and IIOIS403 Consoles

Ba ey Part Number 6638554A3

See Figure 7 6 when using this procedure. The floppy drive can be removed from the cabinet without removing the key board connector panel refer to Step 9.

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

2 In the rear of the cabinet, partially remove the power supply Remove the 2 screws on the bottom of the power supply and slide it out of the rear 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 con nected to the front of the operator keyboard interface panel.

4 Remove the peripheral power cables to the floppy disk drive from the DC distribution board

5 Remove all of the cables from the rear of the operator keyboard interface panel and floppy drive unit

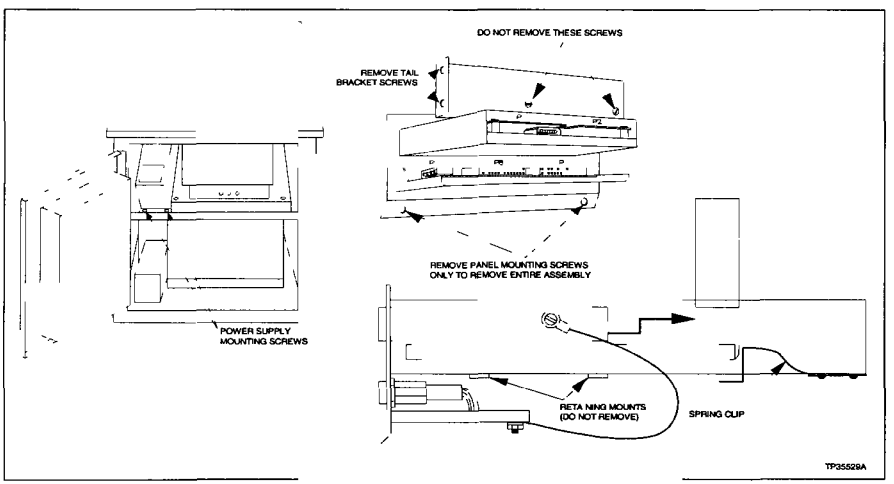


Figure 7 6 Floppy Disk Drive Removal for IIOIS40 Console

6. Remove the 2 screws holding the floppy drive tail brace to the left wall of the cabinet.

7 Remove the 2 screws holding the bottom of the operator keyboard interface panel to the rear side of the monitor bezel There are no screws on top or on the sides of the panel

8 Carefully remove the operator keyboard interface panel containing the floppy drive out the rear of the cabinet

9. Check that the power is off and the floppy drive signal and power cables are removed and labeled

10. Pull down on the steel spring clip in the bottom center of the floppy drive mounting bracket until it stops (approximately ½ inch)

11 Slide the floppy drive onto the spring clip until it stops (approximately ¾ inch) to unlatch the 4 retaining mounts holding the bottom of the floppy drive to the mounting bracket Pull carefully, if the floppy drive does not slide easily, one of the signal cables may be interfering

12 Lift the floppy drive approximately ¾ inch to clear the retaining mounts from the mounting bracket

13 Slide the floppy drive out past the spring clip. Remove the floppy drive carefully, if the floppy drive does not slide easily, the ribbon signal cable may be interfering

NOTES

1 The I O S40 f oppy dr ve s part of the VAXstat on nomenc ature and cannot be ordered without a VAXstation

2 The IIOIS40A and IIO S40D f oppy dr ve s part of the VAXsta t on and cannot be ordered w thout a VAXstat on

Multibus Card Cage for IIOIS40 and IIOIC402 Consoles

Ba ey Part Number 6637801A2

See Figure 7 7 when using this procedure.

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

2 Follow the procedure in the beginning of this section to remove the modules

3 In the rear of the cabinet, disconnect all cables and wiring from the card cage

4 Remove the 4 screws at the front of the card cage (2 on each side)

5 Slide the cage out of the front of the cabinet

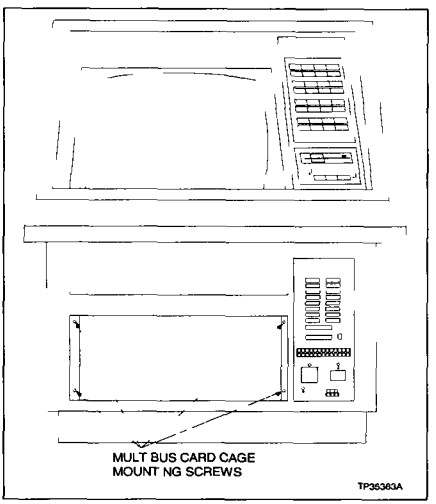


Figure 7 7 Multibus Card Cage Removal for IIOIS40/IIOIC402 Consoles

Multibus Card Cage for IIOIS40A Cabinet

Ba ey Part Number 6637801A4

See Figure 7 8 when using this procedure

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

2 Follow the procedure in the beginning of this section to remove the modules.

3 In the rear of the cabinet, disconnect all cables and wiring from the card cage.

4 Remove the 4 screws at the front of the card cage (2 on each side)

5 Slide the cage out of the front of the cabinet

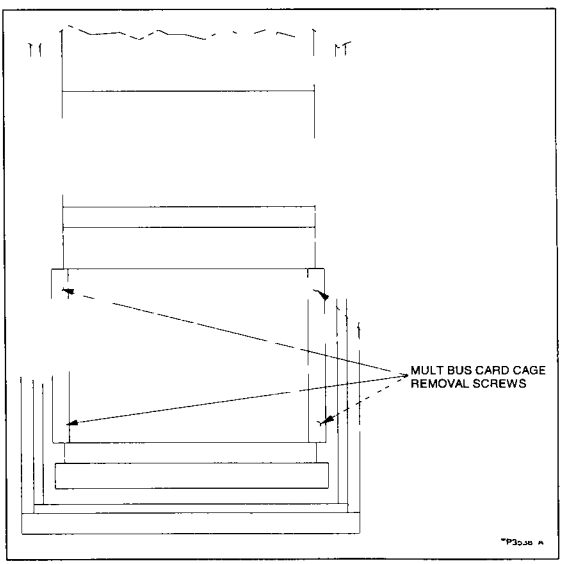


Figure 7 8. Multibus Card Cage Removal for IIOIS40A Cabinet

VAXstation for IIOIS401 and IIOIS402, and IIOIC4021 and IIOIC4022 Consoles

Ba ey Part Number 1948756A1 (VAXstat on 3100 Model 38 w th d sk dr ves)
Ba ey Part Number 1948757A1 (VAXstat on 3100 Mode 38 w thout d sk dr ves)

See Figure 7 9 when using this procedure.

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

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

CAUTION	***Support the VAXstation before removing the last mounting screw or damage to the VAXstation may result.***
ATTENTION	**Soutenez le VAXstation avant de retirer la derniere vis de fixation sinon l'appareil pourrait subir des dommages.**

3 Loosen the 2 captive screws on the right side of the panel supporting the VAXstation and open the panel

4 Remove the AC power cable from the VAXstation

5 Remove and label all communication cables from the rear of the VAXstation

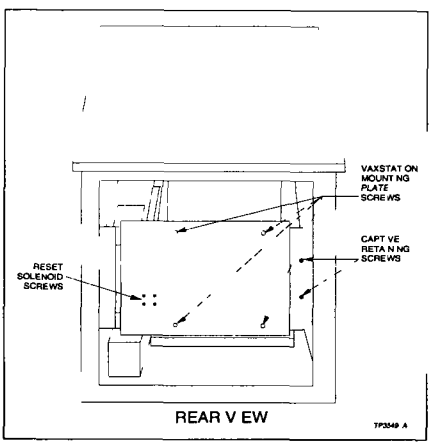


Figure 7 9 VAXstation Removal for IIOIS401/2 and IIOIC4021/2 Consoles

6 Remove the 4 screws that hold the VAXstation to the inside of the support panel

NOTE: When installing a VAXstation, align the reset solenoid so that it will press the reset button

VAXstation for IIOIS403 Console

Ba ey Part Number 1948756A2 (VAXstat on 3100 Mode 38)
Ba ey Part Number 1948757A1 (VAXstat on 3100 Mode 30 or 38)

See Figure 7 10 when using this procedure.

CAUTION	**Support the VAXstation before removing the last mounting screw cr damage to the VAXstation may result.**
ATTENTION	**Soutenez le VAXstation avant de retirer la dern ere vis de fixation, sinon l'appareil pourrait subir des dommages.**

There are two VAXstations in the IIOIS403 console Both units are located inside the access door at the rear of the console cabinet The outside VAXstation model 30 controls the upper monitor and the inside VAXstation model 38 controls the lower monitor, data storage and communications

NOTE The outs de VAXstat on must be removed before the ns de VAXstat on s removed

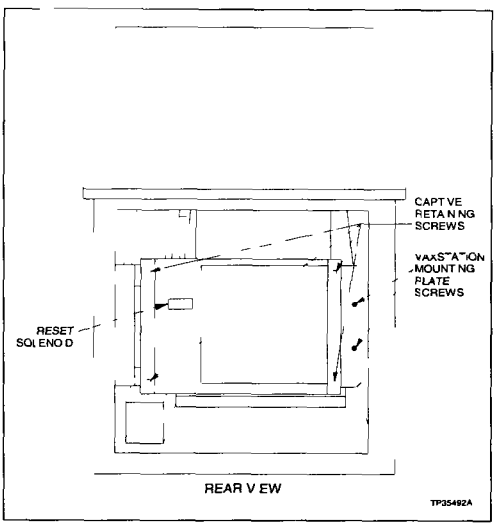


Figure 7 10 VAXstation Removal for IIOIS403 Console

Follow the procedure in the IIOIS401 and IIOIS402 section for removing the inside VAXstation Follow this procedure to remove the outside VAXstation

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

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

3 Loosen the 2 captive screws on the right side of the panel supporting the VAXstation and swing open the panel

4 Remove the AC power cable from the VAXstation

5 Remove and label all communication cables from the rear of the VAXstation for the upper monitor

6 Remove the 4 screws that fasten the support panel for the upper monitor VAXstation to the hinged support panel for the VAXstation for the lower monitor

7 Remove and label all communication cables from the rear of the VAXstation for the lower monitor

8 Remove the 4 screws that hold the VAXstation for the lower monitor to the hinged support panel

NOTE When installing a VAXstation align the reset solenoid so that when you press the reset button

9 Remove the 4 screws that hold the VAXstation to the mounting panel

VAXserver for IIOIS40A and IIOIS40D Cabinets

Ba ey Part Number - 1948801A1 (VAXserver 3100 Mode 10e)

See Figure 7 11 when using this procedure

This procedure explains how to remove the VAXserver

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

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

3. Remove the AC power cable from the VAXserver.

4 Remove and label all communication cables from the rear of the VAXserver

5 Remove the 2 screws that fasten the support bracket to the rear of the VAXserver mounting plate

6 Remove the 2 screws that fasten the support bracket to the rear of the rail plate

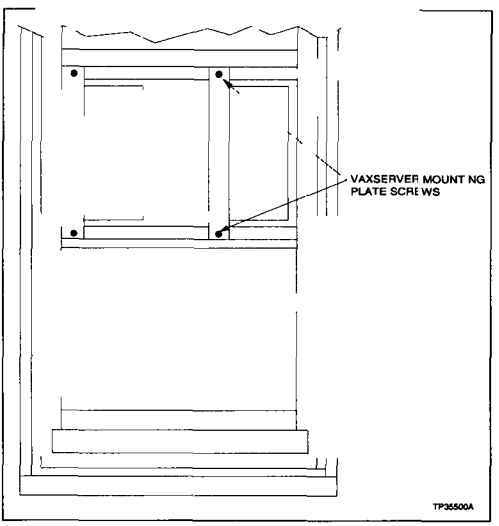


Figure 7 11. VAXstation Removal for IIOIS40A/D Cabinets

7 Remove the 2 screws that fasten the mounting plate to the front of the rail plate.

8 Slide the VAXserver and mounting plate completely out the front of the cabinet

9 Place the VAXserver and mounting plate on a clean work surface.

10. Remove the 4 screws from the bottom of the mounting plate. These screws fasten the VAXserver to the mounting plate.

VAXstation for IIOIC401 Console

Ba ey Part Number 1948757A1 (VAXstat on 3100 Model 30 or 38)

See Figure 7 12 when using this procedure

1 Turn off the 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, open the access door.

3 Rem ove the AC power cable from the VAXstation.

4 Remove and label all communication cables from the rear of the VAXstation

5 Remove the 2 screws that fasten the VAXstation mount ing plate to the track on each side of the cabinet

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

7 Lay the VAXstation and mounting plate on a clean work surface

8 Remove the 4 screws from the bottom of the mounting plate These screws fasten the VAXstation to the mounting plate

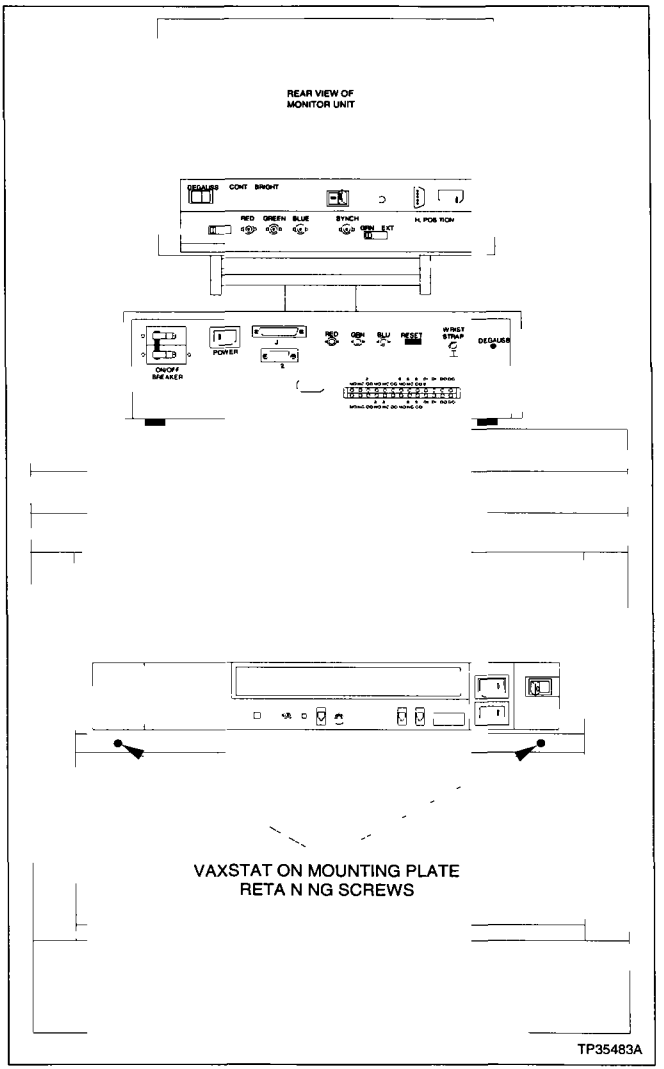


Figure 7 12 VAXstation Removal for IIOIC401 Console

VAXstation for IIOIC4021 and IIOIC4022 Consoles

Ba ey Part Number 1948757A1 (VAXstat on Model 30 or 38)

There is one VAXstation model 30 or 38 in the IIOIC4023 consol=. It is located inside the access door at the rear of the consol= cabinet

To remove the VAXstation, refer to the procedure for remov ing the VAXstation in the IIOIS401 and IIOIS402 console

VAXstation for IIOIC4023 Console

Ba ey Part Number 1948757A1 (VAXstat on 3100 Mode 30 or 38)

There are two VAXstation model 30 or 38 units in the IIOIC4023 console. Both units are located inside the access door at the rear of the console cabinet

To remove the VAXstation, refer to the procedure for remov ing the VAXstations in the IIOIS403 console

VAXstation for IIOIC403 Console

Ba ey Part Number 1948757A1 (VAXstat on 3100 Mode 30 or 38)

See Figure 7 13 when using this procedure.

1 In the front of the cabinet, open the door and 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 Remove the AC power cable from the VAXstation

3 Remove and label all communication cables from the top of the VAXstation

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

5 Slide the mounting plate and VAXstation out of the cabi net carefully

6 Remove the 4 screws that hold the VAXstation to the mounting panel

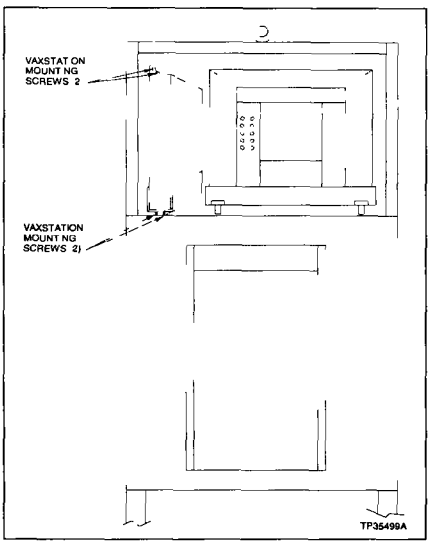


Figure 7 13 VAXstation Removal for IIOIC403 Console

VAXstation for IIOIC404 Console

Ba ey Part Number - 1948757A1 (VAXstat on 3100 Mode 30 or Mode 38)

See Figure 7 14 when using this procedure

1 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 Remove the AC power cable from the VAXstation

3 Remove and label all communication cables from the rear of the VAXstation

4 Remove the 4 screws that hold the VAXstation to the support bracket

5 Slide the unit out along the support bracket

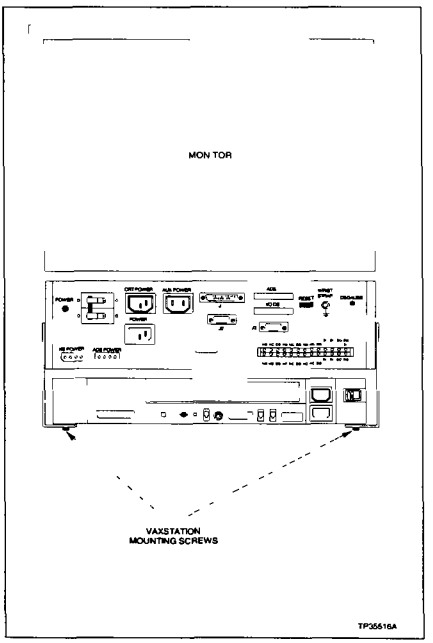


Figure 7 14 VAXstation Removal for IIOIC404 Console

Power Entry Panel for IIOIS40 and IIOIC402 Consoles

Ba ey Part Number 6638353A3 (for IOIS40)
Ba ey Part Number 6638353A4 (for IO C402)

See Figure 7 15 when using this procedure

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

2 Shut down AC line power to OIS or OIC console (plant breaker) so that the AC line may be disconnected safely

3 In the front of the cabinet, remove all cables from the front of the power entry panel (RS 232 C, SCSI alarm con tact wires and AC input)

4 In the rear of the cabinet, remove AC cables from the outlets on the power entry panel

5 Remove all signal cables from the multibus modules that go 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 In the front of the cabinet, remove the 5 screws from around the edges of the power entry panel Slide the power entry panel out the front of the cabinet

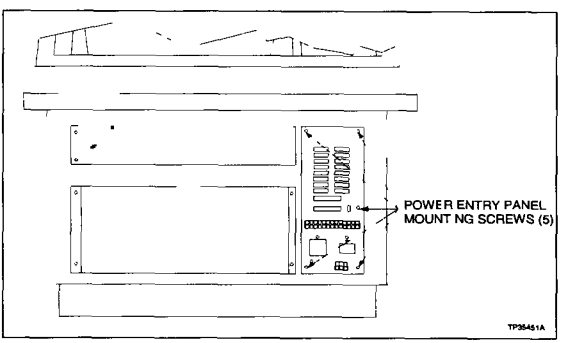


Figure 7 15 Power Entry Panel Removal for IIOIS40/IIOIC402 Consoles

Power Entry Panel and Power Supply for IIOIS40A Cabinet

Ba ey Part Number 6639225A1

See Figure 7 16 when using this procedure

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

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

3 Remove AC cables from the outlets on the rear of the power entry panel

4 In the rear of the cabinet, remove the screw fastening the power entry panel to the multibus card cage

5 Slide the unit out the front of the cabinet

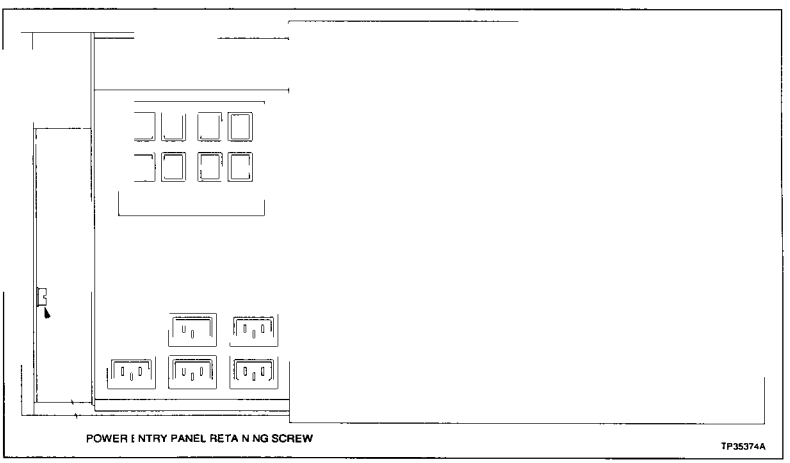


Figure 7 16 Power Entry Panel Removal for IIOIS40A Cabinet

Power Entry Panel for IIOIC403 Console

Ba ey Part Number - 6639503A1

See Figure 7 17 when using this procedure.

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 Shut down AC line power to OIC console (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 IIMKM02 cable Refer to Section 3 for IIOIC404 cable connections

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

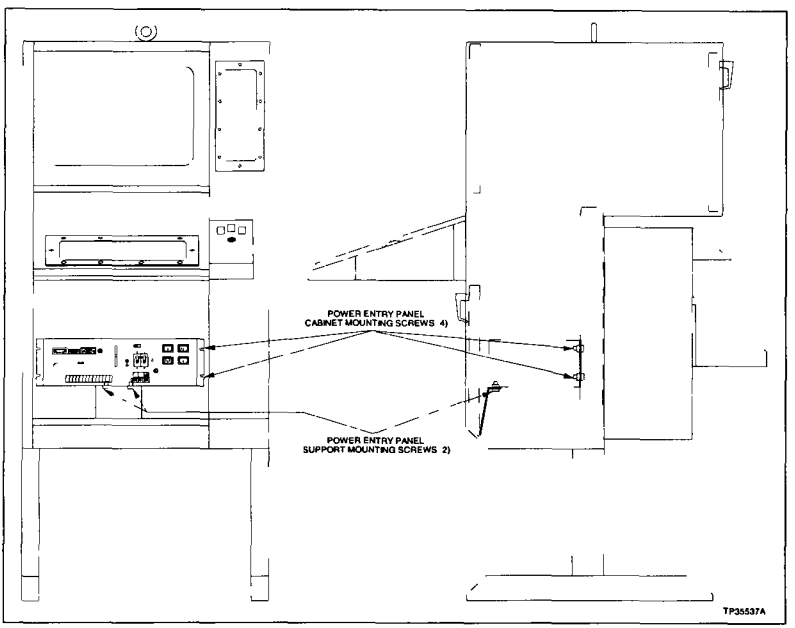


Figure 7 17 Power Entry Panel Removal for IIOIC403 Console

5 Remove the 2 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 screws with Dow Corning® 732™ RTV clear sealant or equivalent.

6 In the front of the cabinet, remove the 4 screws from around the rear edges of 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 kilograms (50 pounds)

® Dow Corning is a registered trademark of Dow Corning Company
™ 732 is a trademark of Dow Corning Company

Main Power Supply for IIOIS40 and IIOIC402 Consoles

Ba ey Part Number 1948564A1 (I OIS40)
Ba ey Part Number 1948564A2 (I OIC402)

See Figure 7 18 when using this procedure

1 Shut off power to the OIS or OIC console

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 2 nuts holding the power supply bracket to the monitor mounting platform and slide the unit out the rear of the cabinet

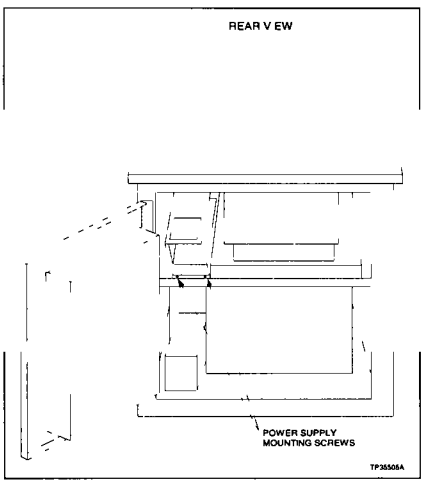


Figure 7 18 Main Power Supply Removal for IIOIS40/IIOIC402 Consoles

Main Power Supply for IIOIS40A and IIOIS40D Cabinets

Bai ey Part Number 6639225A1

The power supply is built into the power entry panel To remove the power supply, refer to the procedure in this section to remove the power entry panel

Main Power Supply for IIOIC401 Console

Ba ey Part Number 1948564A2

See Figure 7 19 when using this procedure

1 Remove power from the IIOIC401 console.

2 To remove the cover from the top of the power entry panel, remove the 8 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 4 screws from the outside bottom of the chassis fastening the power supply to the chassis

6 Set the monitor and chassis upright and replace the cover

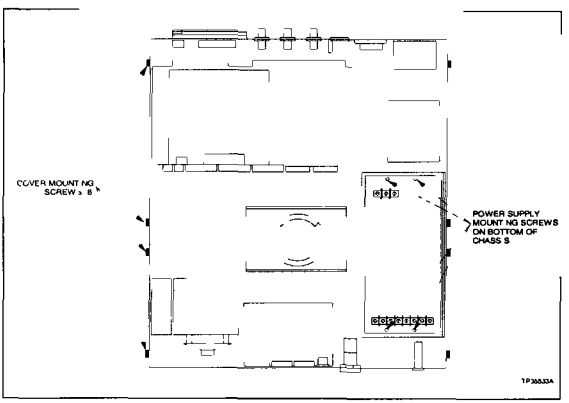


Figure 7 19 Main Power Supply Removal for IIOIC401 Console

Main Power Supply for IIOIC403 Console

Ba ey Part Number - 1948564A2

See Figure 7 20 when using this procedure

1 Follow the procedure for removing the IIOIC403 power entry panel in this section

2 Remove the IIMKM02 circuit board Do not lose the 2 nonconductive washers for each standoff

3 To remove the cover from the top of the power entry panel, remove the 9 screws shown in Figure 7 20 and discon nect the power distribution board connector

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

NOTE Check that the power d str but on board connector to the power supp y s a gned correct y when rep ac ng the cover

5 Remove the 4 screws holding the power supply to the center support wall of the power entry panel

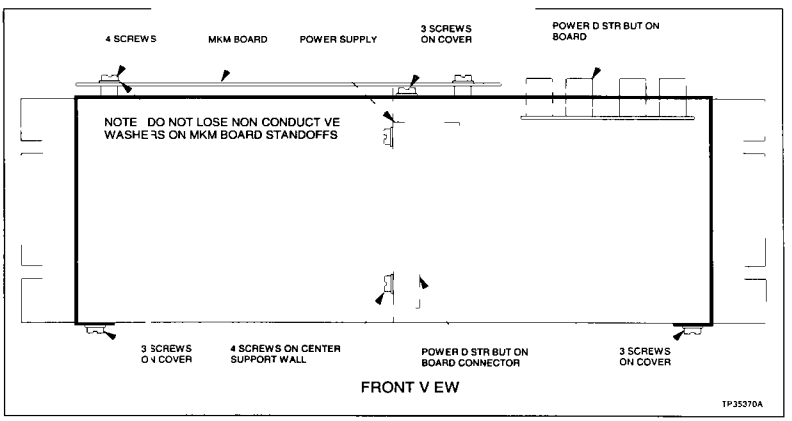


Figure 7 20 Main Power Supply Removal for IIOIC403 Console

Main Power Supply for IIOIC404 Console

Ba ey Part Number - 1948564A2

See Figure 7 21 when using this procedure

1. Remove power from the IIOIC404 console.

2 To remove the power entry panel, remove the 2 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 4 screws from the outside bottom of the chassis fastening the power supply to the chassis.

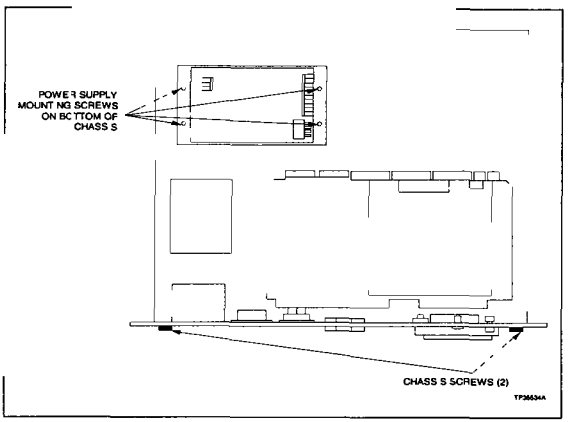


Figure 7 21. Main Power Supply Removal for IIOIC404 Console

SECTION 8 - SUPPORT SERVICES

INTRODUCTION

Bailey Controls 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 can also provide installation, repair, and maintenance contract services

REPLACEMENT PARTS AND ORDERING INSTRUCTIONS

Order replacement parts through a Bailey Controls 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 has a modern training facility available for training your personnel On site training is also available Contact a Bailey Controls 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

Table 8 1 lists the recommended spare parts for the OIS and OIC console Bailey Controls suggests stocking one item each to minimize the duration and cost of down time

Table 8 1 Recommended Spare Parts List

Replacement Part		Where Used					
		OIS		OIC			
Descr pt on	Nomenclature	401 402 403	40A 40D	401	4021 4022 4023	403	404
A r f ter	1990006A1	X	X		X		
Annunc ator d sp ay pane (tab etop)	ADP01	X		X	X		X
B ack and wh te pr nter	PRT02	X	X				
Co or mon tor (19 nch)	1948623A3	X		X	X	X	X
Fan	1947419A7	X	X		X		
F oppy d sk dr ve[1]		X	X				
Fuse 1 A (for MCL01)	194776A11001	X	X				
Fuse 2 A fast act ng (keyboard nterface board)	1948182A22001	X	X	X	X	X	X
Hard d sk dr ve[1] 100M and 200M		X	X				
Keyboard QWERTY (aux ary eng neer ng LK201)	1948804A1	X			X		
Keyboard operator (my ar)	6638514A1	X		X	X	X	X
Keyboard QWERTY (aux ary *eng neer ng*)	AKB02	X		X	X	X	X
Mouse	AMS02	X		X	X		X
Mu t bus commun cat on oop modu e	MCL01	X	X				
Mu t bus commun cat ons processor modu e (10 000 tag system)	MCP01	X	X				
Mu t bus commun cat ons processor modu e (30 000 tag system)	MCP02	X	X				
Mu t bus reset modu e	MRM01		X				
Mu t bus keyboard modu e	MKM02	X		X	X	X	X
Mu t bus oop modu e	MLM01	X	X				
Power supp y	1948564A1				X		
Power supp y	1948564A2			X		X	X
Power supp y (s de n supp y)	6639225A1		X				
Pr nter server	PRS01						
Stream ng tape (120V)	DST02	X	X				
St ea- -g tape (240V)	DST03	X	X				
VAXstat on 3100 mode 38[1] *(w th d sk dr ves)*	1948756A2	X					
VAXstat on 3100 mode 38[1] (w thout d sk dr ves)	1948757A1			X	X	X	X
VAXserver 3100 mode 10e[1]	1948801A1		X				

NOTE 1 Order parts and serv ce for DEC equ pment through Ba ey Contro s

APPENDIX A - QUICK REFERENCE INFORMATION

INTRODUCTION

This section provides a source for reference information It contains the cable connections for the IIOIS40, IIOIC401 IIOIC402, IIOIC403 and IIOIC404 console

IIOIS40 AND IIOIC40 WIRING CONNECTIONS AND CABLING

The OIS and OIC console is internally wired when it is shipped Connect the communication loop cables, AC power and any peripheral devices AC power is connected to TB1 on the power entry panel Communication loop cables connect to the IIMCL01 module in the multibus card cage Peripheral devices connect to the front of the power entry panel or to the keyboard interface panel Refer to Section 4 for specific instructions on installing and configuring peripheral devices and replacement components The complete IIOIS40 and IIOIC40 wiring tables are listed in Section 3

IIOIS40 cable connections are shown in Figure A 1 IIOIC401 cable connections are shown in Figure A 2 IIOIC402 cable connections are shown in Figure A 3 IIOIC403 cable connections are shown in Figure A 4 IIOIC404 cable connections are shown in Figure A 5

INSTALLATION SUMMARY

This section contains a summary of installation data Refer to the ***Site Planning and Preparation*** manual for more information Table A 1 lists the power consumption Table A 2 lists the cabinet dimensions Table A 3 lists the input current (amps RMS) Table A 4 lists the power requirements Table A 5 lists the cooling requirements Table A 6 lists the weights

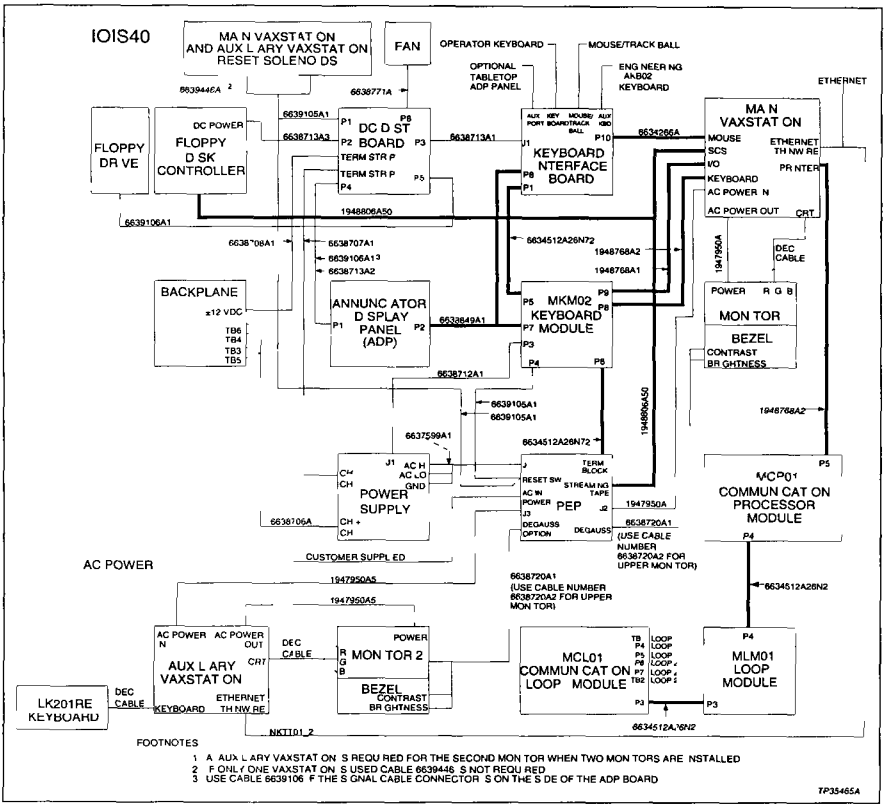


Figure A 1 IIOIS40 Cable Connections

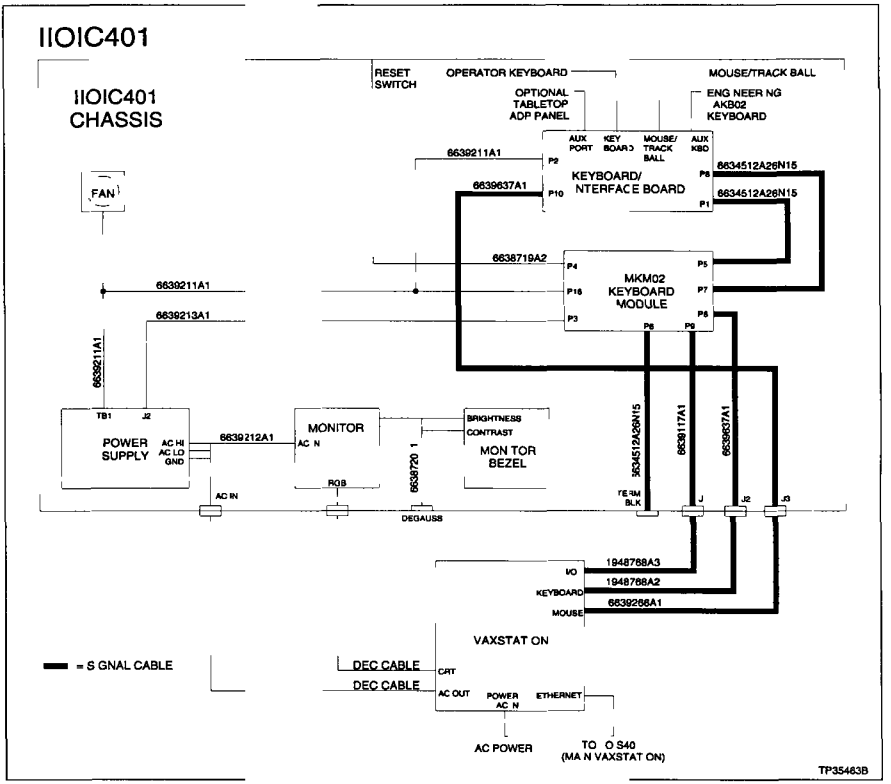


Figure A 2 IIOIC401 Cable Connections

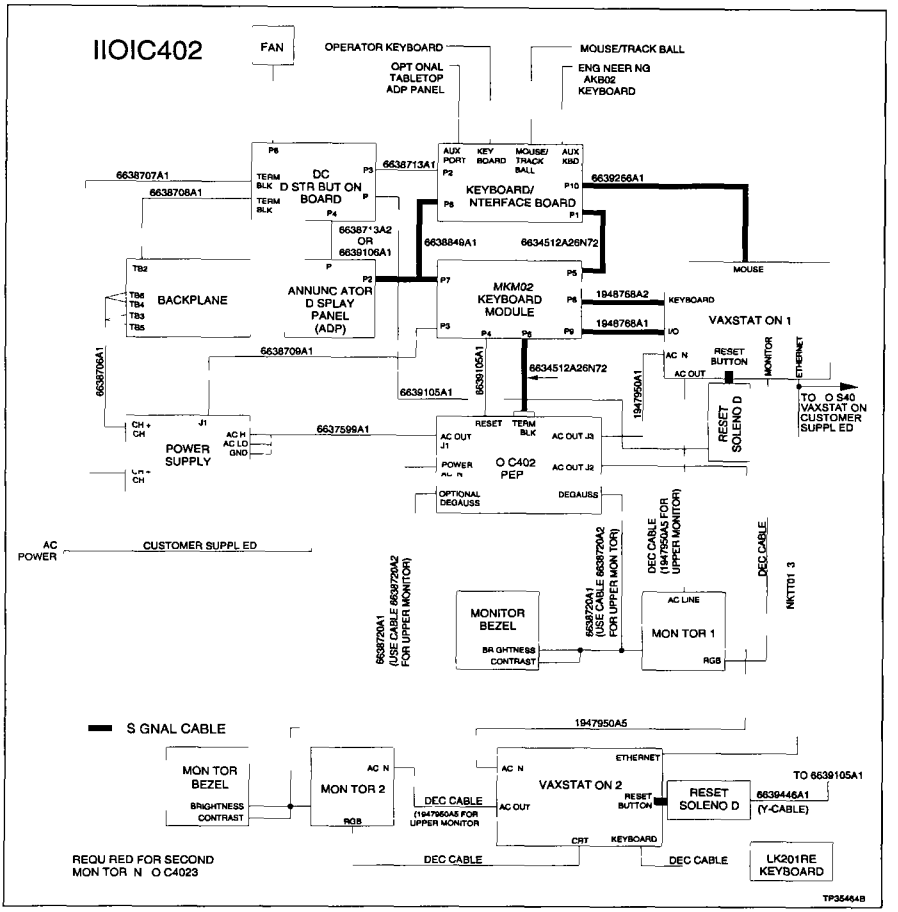


Figure A 3 IIOIC402 Cable Connections

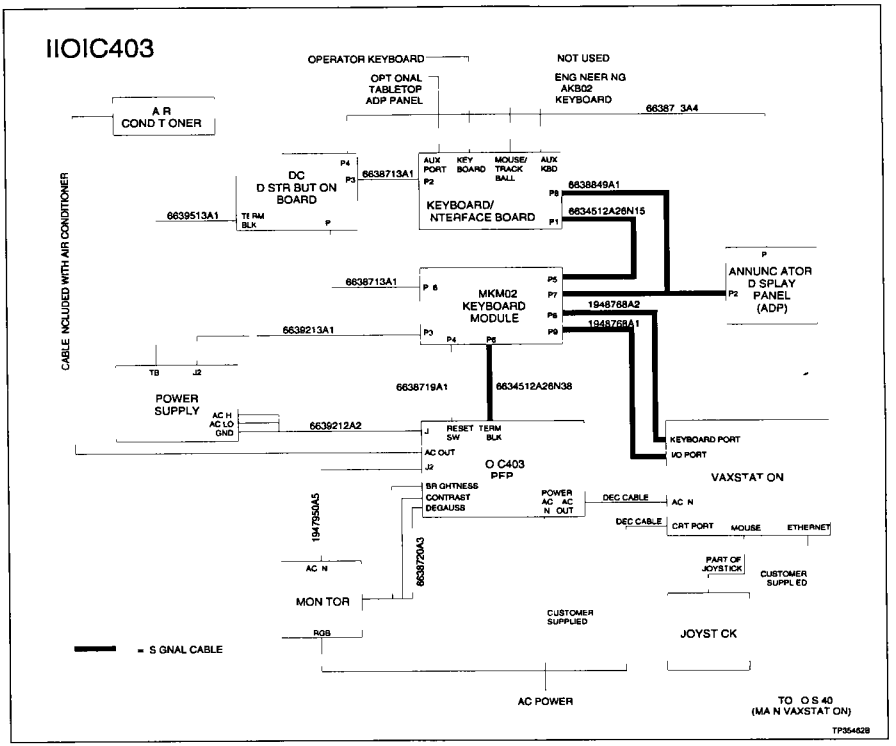


Figure A 4 IIOIC403 Cable Connections

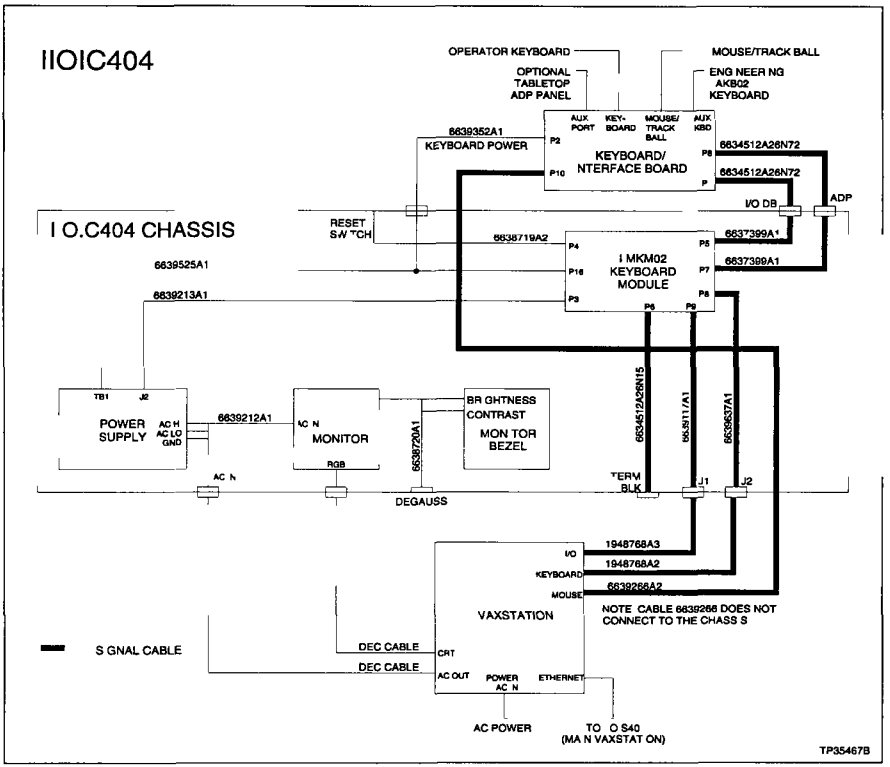


Figure A 5 IIOIC404 Cable Connections

Table A 1. IIOIS40 and IIOIC40 Power Consumption

Nomenclature	Description	Typical Amps	Typical Dissipation BTU/Hr
O S40¹¹	Conso e ow ~or to~, ¹20 VAC	2 77	760
O S4012	Conso e ow π on tor 240 VAC	1 60	760
O S4021	Conso e h gh mon tor 120 VAC	2 77	760
O S4022	Conso e h gh mon tor, 240 VAC	1 60	760
O S4031	Conso e dua mon tor, 120 VAC	3 78	1070
O S4032	Conso e dua mon tor 240 VAC	2 15	1070

Table A 1 IIOIS40 and IIOIC40 Power Consumption (continued)

Nomenc ature	Description	Typical Amps	Typ cal Diss pation BTU/Hr
O S40A1	Dr ver cab net 120 VAC	1 65	435
I O S40A2	Dr ver cab net 240 VAC	1 02	435
O S40D1	Dua dr ver cab net 120 VAC	3 30	870
O S40D2	Dua driver cab net, 240 VAC	2 04	870
O C40101	19 nch mon tor tab etop 120 VAC	2 51	670
I O C40102	19 nch mon tor tabletop 240 VAC	1 50	670
I O C40211	Conso e ow mon tor 120 VAC	2 51	670
I O C40212	Conso e ow mon tor 240 VAC	1 50	670
I O C40221	Conso e h gh mon tor 120 VAC	2 51	670
IOIC40222	Conso e h gh mon tor 240 VAC	1 50	670
IO C40231	Conso e dua mon tor 120 VAC	2 74	760
IOIC40232	Conso e - dua mon tor 240 VAC	1 64	760
IO C40301	Env ronmenta 120 VAC	3 28	1010
IO C40302	Env ronmenta 240 VAC	1 92	1010
O C40411	Pane mount 120 VAC	2 51	670
O C404'2	Pane mount, 240 VAC	1 50	670

Table A 2 IIOIS40 and IIOIC40 Dimensions

Nomenclature	Descript on	Dimensions					
		Height		Width		Depth	
		cm	in	cm	in	cm	in
O S401	Conso e ow mon tor	107 27	42 23	71 12	28 00	109 01	42 92
IIOIS402	Console high mon tor	156 94	61 79	71 12	28 00	109 01	42 92
O S403	Conso e d a mon tor	156 94	61 79	71 12	28 00	109 01	42 92
OIS40A	Dr ver cab net	221 28	87 12	60 96	24 00	76 20	30 00
O S40D	Dr ver cab net	221 28	87 12	60 96	24 00	76 20	30 00
O C401	19 nch tab etop mon tor	61 00	24 00	51 30	20 00	55 90	22 00
I O C4021	Conso e ow mon tor	107 27	42 23	71 12	28 00	109 01	42 92
O C4022	Conso e h gh mon tor	156 94	61 79	71 12	28 00	109 01	42 92
O C4023	Conso e dua mon tor	156 94	61 79	71 12	28 00	109 01	42 92
O C403	Env ronmenta mon tor	177 80	70 00	76 20	30 00	85 90	33 82
O C404	Pane Mount mon tor	37 39	14 72	45 67	17 98	61 41	24 17

Table A 3. Input Current (Amps RMS)

Nomenclature	Description	100% Operating	Nominal Inrush
O S4011 O S4012	Console ow mon or 120 VAC Console - ow mon or 240 VAC	2 77 1 60	60 60
O S4021 O S4022	Conso e h gh mon tor 120 VAC Conso e h gh mon tor 240 VAC	2 77 1 60	60 60
O S4031 O S4032	Conso e dua mon tor 120 VAC Conso e dua mon tor 240 VAC	3 78 2 15	113 113
O S40A1 O S40A2	D- ve- cab ret *20 VAC Dr ver cab net, 240 VAC	* 65 1 02	24 24
OIS40D1 O S40D2	Dua dr ver cab net, 120 VAC Dua dr ver cab net, 240 VAC	3 30 2 04	48 48
O C40101 O C40102	19 nch mon tor tab etop 120 VAC 19 nch mon tor tab etop 240 VAC	2 51 1 50	60 60
O C40211 O C40212	Conso e ow mon or 120 VAC Conso e ow mon tor 240 VAC	2 51 1 50	60 60
O C40221 O C40222	Conso e h gh mon tor 120 VAC Conso e h gh mon tor 240 VAC	2 51 1 50	60 60
O C40231 O C40232	Conso e dua mon tor 120 VAC Conso e dua mon tor 240 VAC	2 74 1 64	112 112
O C40301 O C40302	Env ronmenta 120 VAC Env ronmenta , 240 VAC	3 28 1 92	40 40
O C40411 O C40412	Panel mount, 120 VAC Pane mount, 240 VAC	2 51 1 50	60 60

Table A 4 IIOIS40/IIOIC40 Power Requirements

Model	Description	Typical Watts
O S4011 O S4012	Conso e ow mon tor 120 VAC Conso e h gh mon tor, 120 VAC	221 221
O S4021 O S4022	Conso e - ow mon tor 240 VAC Conso e h gh mon tor, 240 VAC	221 221
IO S4031 IO S4032	Conso e dua mon tor, 120 VAC Conso e - dua mon tor, 240 VAC	313 313
IO S40A1 OIS40A2	Dr ver cab net 120 VAC Dr ver cab net 240 VAC	127 127
OIS40D1 OIS40D2	Dr ver cab net 120 VAC Dr ver cab net 240 VAC	254 254
I O C40101 I OIC40102	19 nch tab etop mon tor 120 VAC 19- nch tab etop mon tor 240 VAC	196 196
OIC40211 IO C40212	Conso e low mon tor, 120 VAC Conso e low mon tor, 240 VAC	196 196
O C40221 O C40222	Conso e h gh mon tor 120 VAC Conso e h gh mon tor 240 VAC	196 196

Table A 4 IIOIS40/IIOIC40 Power Requirements (continued)

Model	Description	Typical Watts
IO C40231	Conso e dua mon tor 120 VAC	222
IO C40232	Conso e - dua mon tor 240 VAC	222
I OIC40301	Env ronmental - mon or 120 VAC	296
I O C40302	Env ronmenta mon or 240 VAC	296
IO C40411	Pane mount mon tor 120 VAC	196
IOIC40412	Pane mount - mon tor 240 VAC	196

Table A 5 IIOIS40/IIOIC40 Cooling Requirements

Model	Descript on	Nominal Heat Dissipat on (BTU/Hr)
I O S401	Conso e low mon tor	760
IIOIS402	Conso e - h gh mon tor	760
OIS403	Conso e dua mon tor	1070
O S40A	Dr ver cab net	435
O S40D	Dua O S dr ver cab net	870
I O C401	19 nch tab etop	670
IIO C4021	Conso e	670
IIOIC4022	Conso e	670
OIC4023	Conso e	760
OIC403	Env ronmenta cab net	1010
O C404	19 nch pane mount	670

Table A 6 IIOIS40/IIOIC40 Weights

Model	Weight	
	kg	lbs
O S401	893	406
O S402	1023	465
O S403	1232	560
I OIS40A	948	431
O S40D	1003	456
IO C401	460	201
I O C4021	893	406
I O C4022	1023	465
I O C4023	1232	560
I O C403	1133	513
I O C404	350	159

APPENDIX B - REDUNDANT ETHERNET NETWORKS

INTRODUCTION

This section explains how to set up redundant Ethernet net works It contains examples of Ethernet connections for the IIOIS40 and IIOIC40 consoles Refer to Section 3 for examples of ThinWire, thickwire, and stand alone configurations

REDUNDANCY

Redundancy on the IIOIS40 system requires a duplicate set of hardware and software that take control of the system if the primary hardware and software fail The auxiliary OIS consoles, and printers connect to the main OIS console through an Ethernet network making true redundancy not possible However, partial redundancy is possible

Redundant IIOIS40 Configurations

Figure B 1 shows how redundancy could be set up A second duplicate OIS console is installed on the same Ethernet segment as the primary OIS console, its auxiliary OIS con

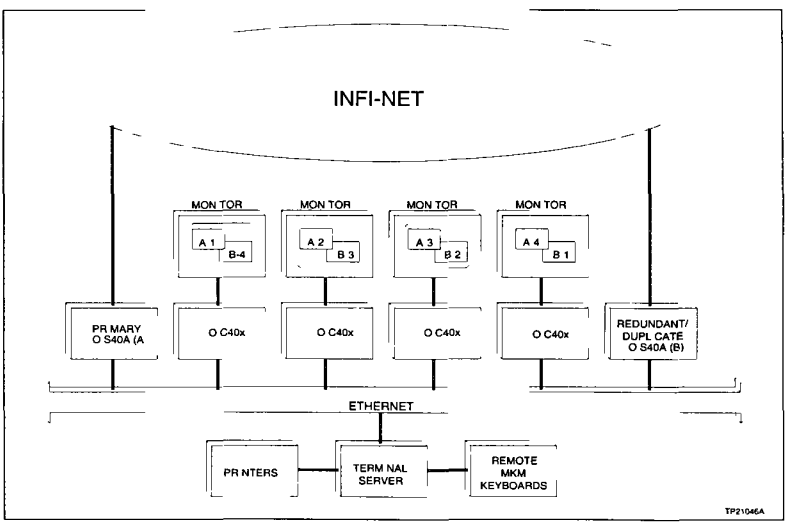


Figure B 1 Redundant IIOIS40 Configuration

soles and terminal servers The duplicate OIS console could be turned off, to be turned on in case the primary OIS console fails The duplicate OIS console could be running all the time as a hot standby.

Figure B 1 shows an example of how windows from the primary and duplicate OIS consoles could be assigned If an auxiliary OIS console fails, the windows assigned to that auxiliary OIS console are reassigned to the active auxiliary OIS consoles. Note that primary and duplicate OIS consoles can send win dows to each other Figure B 2 shows a setup using IIOIS40A hardware

Duplicate terminal servers can also be installed If the primary terminal server fails, devices connected to the server can be rewired to the backup Also, the devices can connect to both servers through transfer switches. In either case, the ports must be reassigned through the software to activate the dupli cate terminal server Duplicate printers can also be used

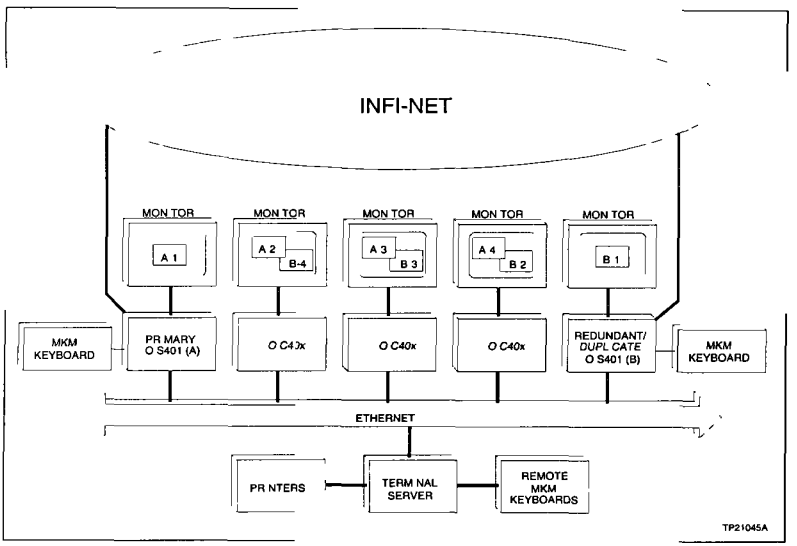


Figure B 2. Redundant IIOIS40A Configuration

Redundant Ethernet Configurations

The only component in the OIS system that cannot be made redundant is the Ethernet cable itself. Reduce the need for a redundant Ethernet by preventing damage to the cable Iso late the cable from the main Ethernet trunk by locating the cable in a separate conduit and keeping the cable within OIS cabinets when possible

Wiring two Ethernet segments in parallel offers redundancy Figure B 3 shows how a failure of any Ethernet segment leaves at least half of the system up and running The hard ware needed will vary with the system.

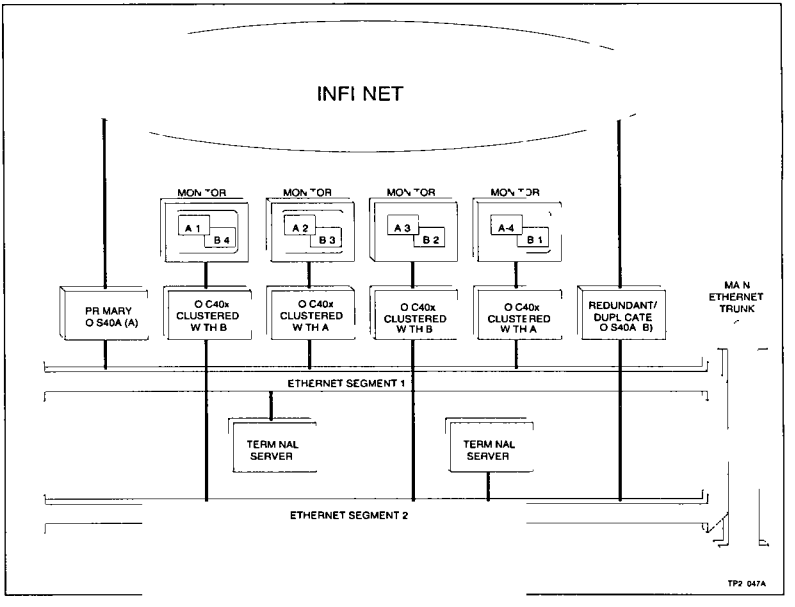


Figure B 3 Redundant Ethernet Configuration

APPENDIX C - INSTALLATION FLOWCHART

INTRODUCTION

This section contains the installation and configuration se quence for an IIOIS40 system Figure C 1 is a flowchart for installing the hardware and software for the IIOIS40 consoles in a cluster This flowchart is a guide, refer to the noted sections for more details Each step in the cluster configura tion is described in more detail in the configuration procedure in Section 3 The ***Operator Interface Station (IIOIS40) Operation/Configuration Manual*** also contains this configuration procedure.

Follow the steps in the order they are presented Note that the driver cabinet does not have a keyboard or monitor A VT terminal is required to install the software

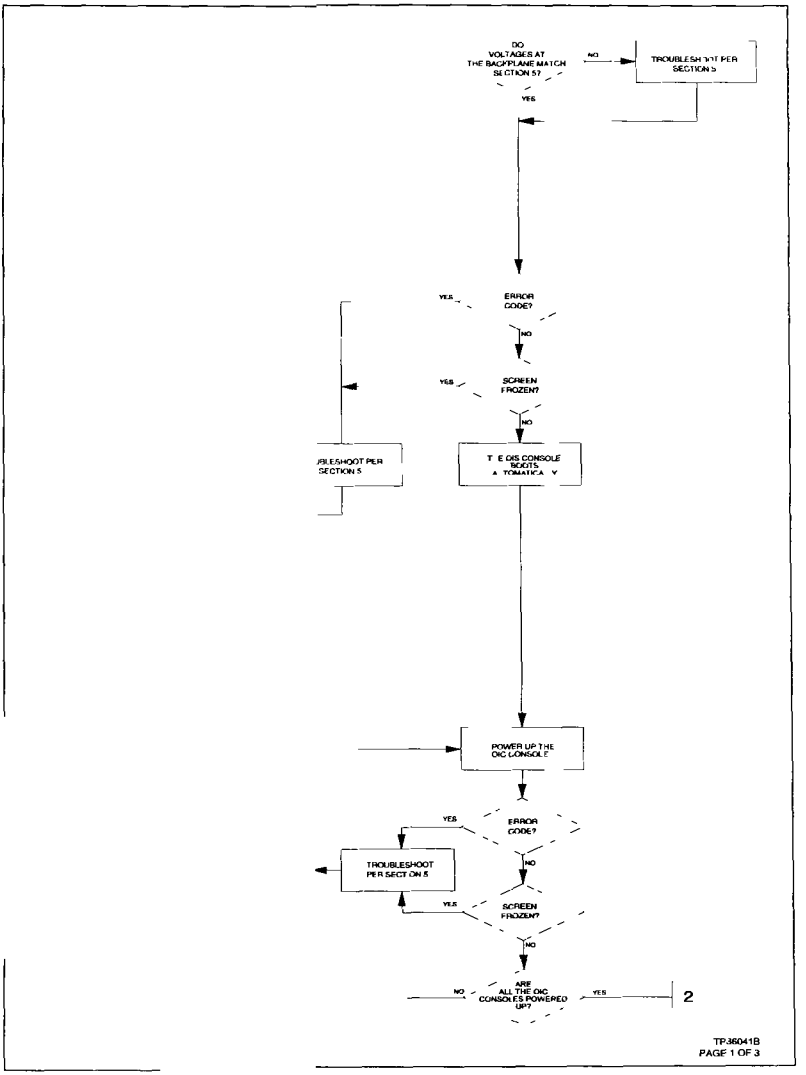


Figure C 1 Installation Flowchart (page 1 of 3)

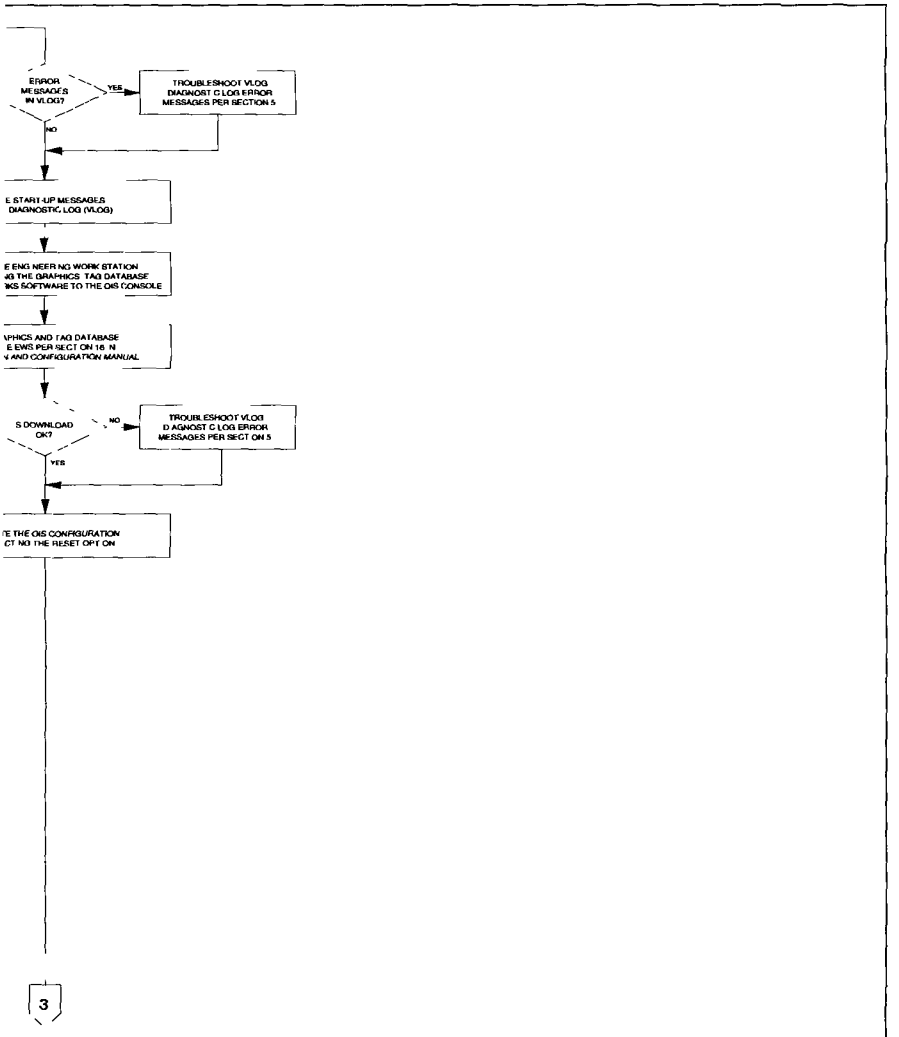


Figure C 1 Installation Flowchart (page 2 of 3)

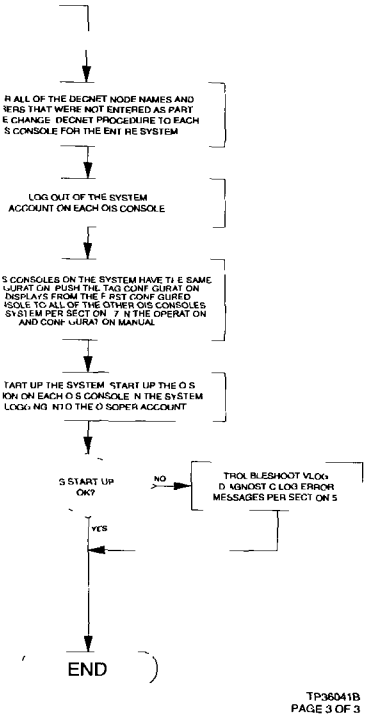


Figure C 1 Installation Flow chart (page 3 of 3)

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