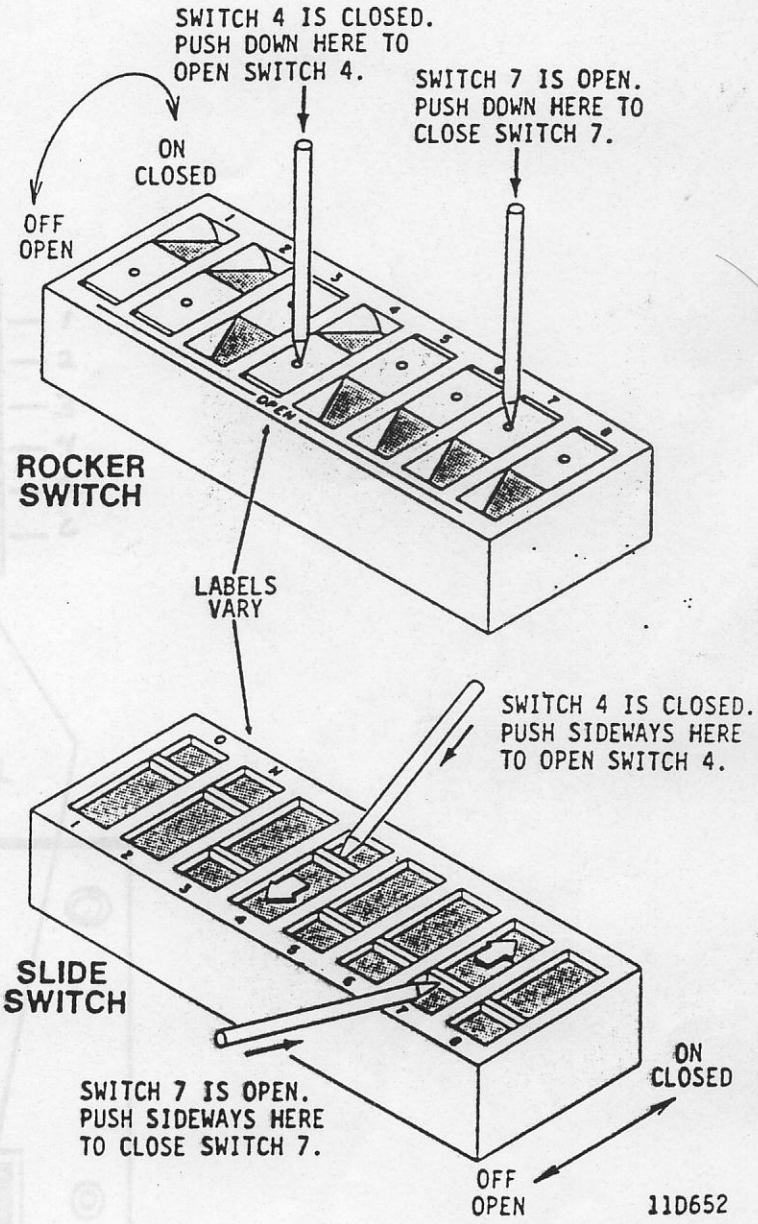
SETTING THE CIRCUIT BOARD SWITCHES

How to Operate DIP Switches

Two groups of small switches (called DIP switches) allow tailoring the drive to your exact needs. One set of DIP switches is found on the I/O board. You reach them through a hole at the left side of the rear panel. The other set is found on the control board. They are reached through holes in the drive top cover.

You may encounter two types of switches. Rocker switches are actuated by pressing one end of the actuator or the other (rocking it) to turn the switch on (closed) or off (open). Slide switches are turned on or off by sliding the actuator one way or the other. Use a slender ball point pen, a straightened paper clip, or any similar object to change the switch settings. Do not use a lead pencil point as it may break off and lodge in the switch, or cause the switch to malfunction.

The switches are mounted in a plastic case and are usually numbered. Other labels may appear next to the switches on the circuit board, or a label may appear at the sides of the access hole in the drive. The position of the labels may not always coincide with the switch setting that enables the function. Always use the table of switch settings to properly set the switches for your needs. A switch is considered closed in the on position and open in the off position.



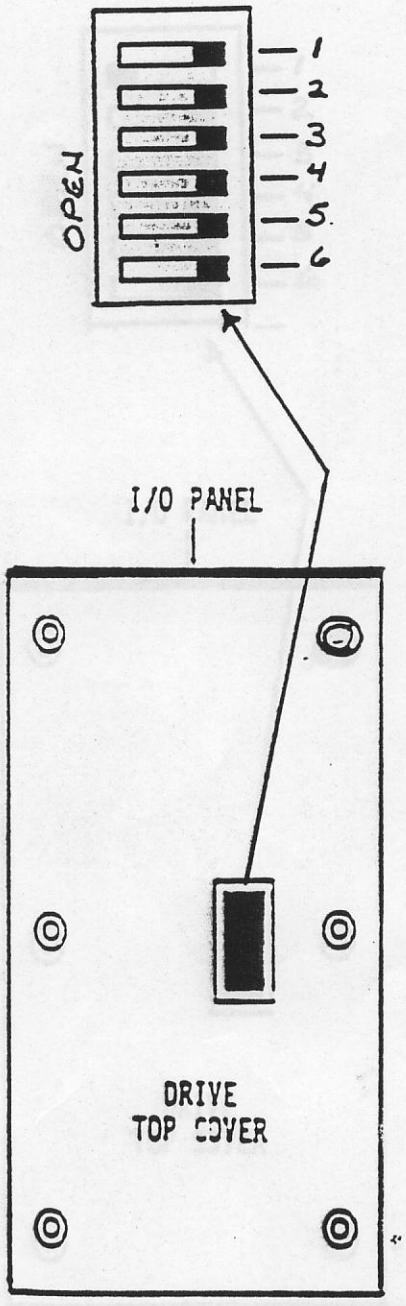
SEAGATE ST8 3050

DISK DRIVE

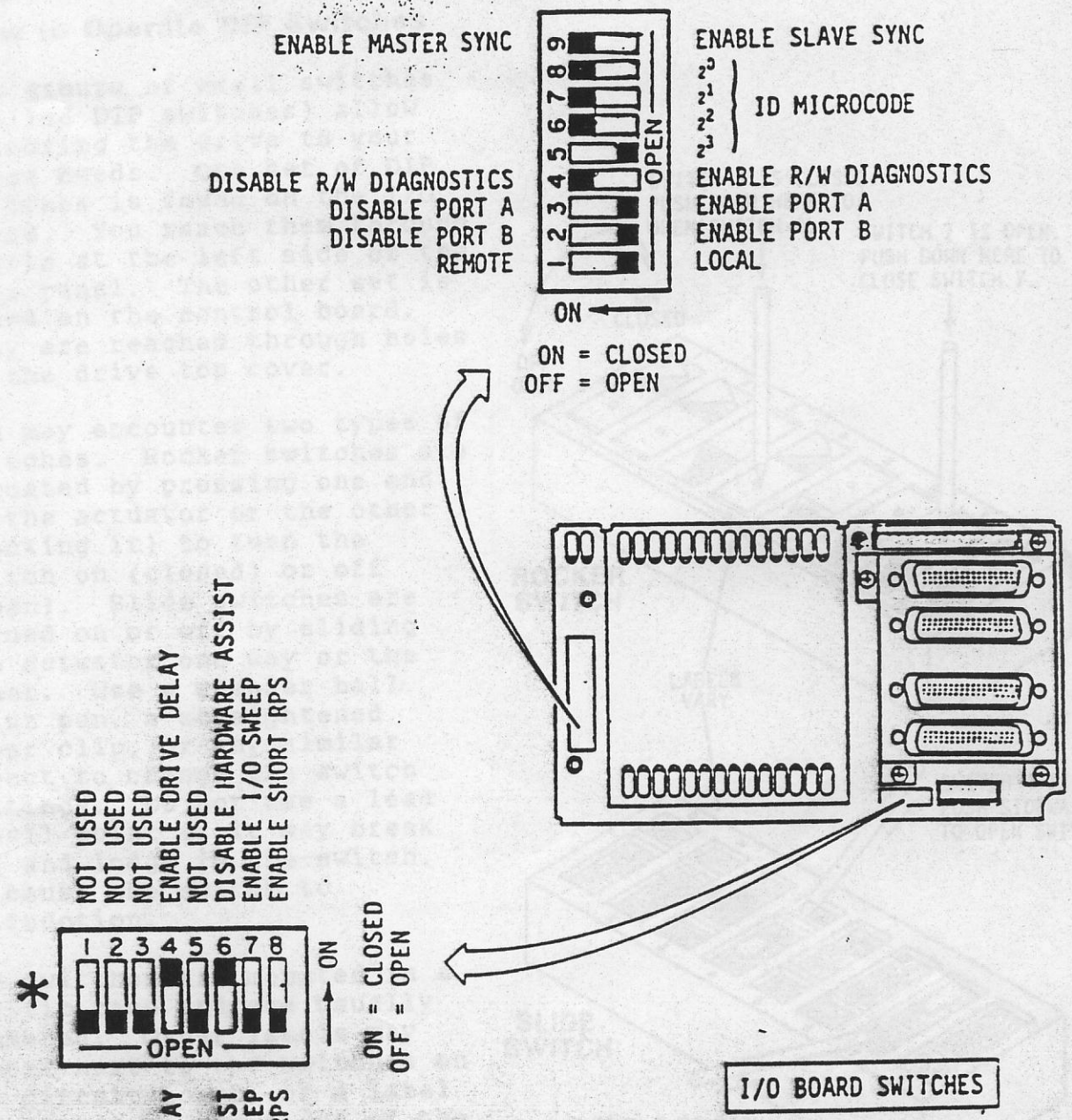
DEVICE 0

4/21/92

SWP0 ■■
SWP1 □□
RTN1 □□



SEAGATE ST83050K DISK DRIVE



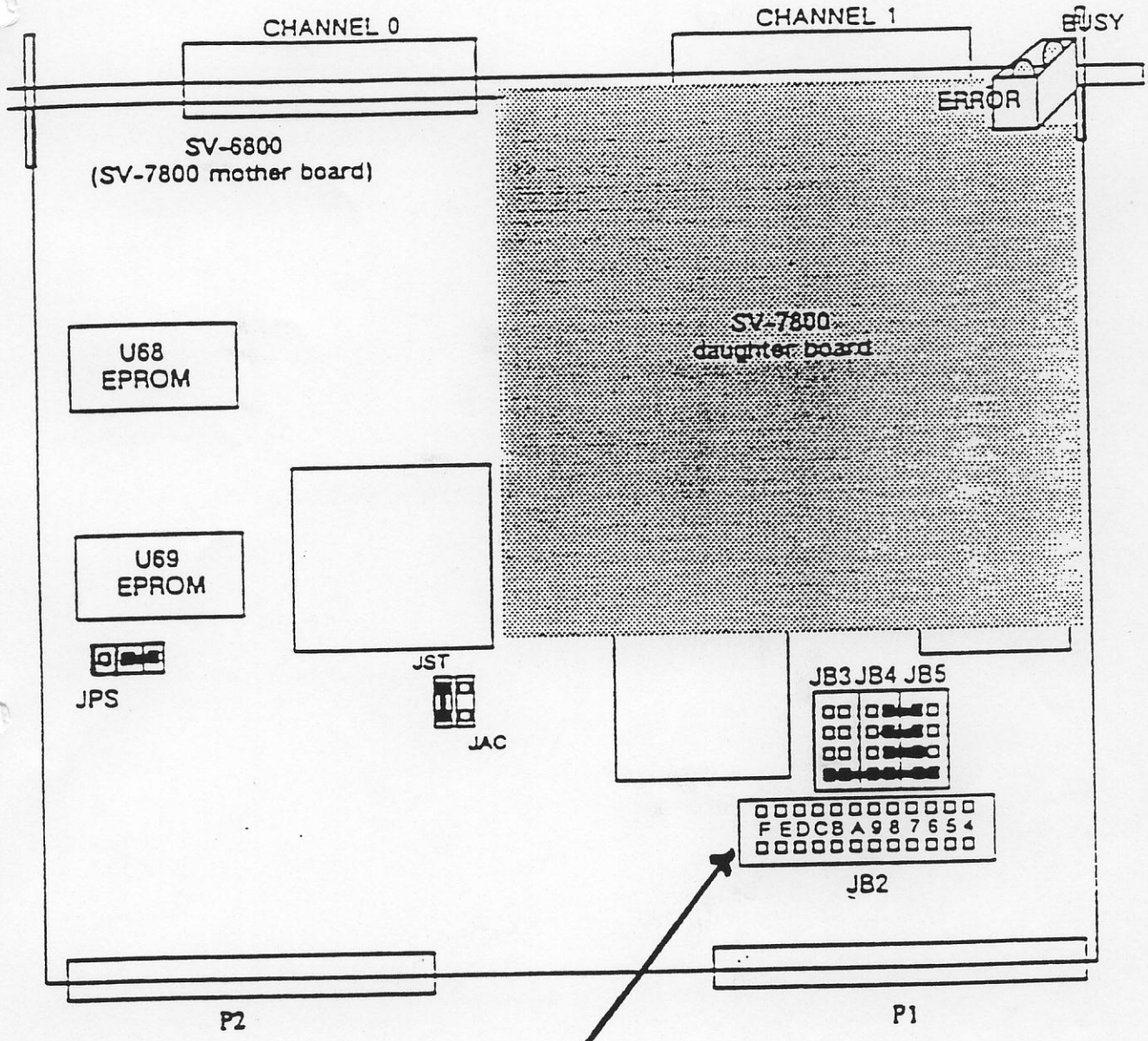
I/O BOARD SWITCHES

* SOME I/O BOARDS DO NOT HAVE THIS SET OF DIP SWITCHES.

11T166

4/22/92

1. SV-7800 Jumper Locations



ONTROLLER ADDRESS JUMPERS

Location JB2 on 7800 controller contains the address jumpers.
Pin Key:
: Means the jumper is OUT (maps to a binary 1)
| Means the jumper is IN (maps to a binary 0)

Address Map:		Jumper Setti								
0xC800 to 0xC8FF	- IPI controller 0	:	:	|	|	:	|		|	|	|
0xC900 to 0xC9FF	- IPI controller 1	:	:	|	|	:	|	|	|	|	|
0xCA00 to 0xCAFF	- IPI controller 2	:	:	|	|	:	|	:	|	|	|
0xCB00 to 0xCBFF	- IPI controller 3	:	:	|	|	:	|	:	:	|	|	|
0xCC00 to 0xCCFF	- IPI controller 4	:	:	|	|	:	:	|	|	|	|	|
0xCD00 to 0xCDFF	- IPI controller 5	:	:	|	|	:	:	|	:	|	|	|
0xCE00 to 0xCEFF	- IPI controller 6	:	:	|	|	:	:	:	|	|	|	|
0xCF00 to 0xCFFF	- IPI controller 7	:	:	|	|	:	:	:	:	|	|	|

TABLE OF CONTENTS

1.0 POWER

1.1 CONTROL BOARD POWER

1.1.1 Power to the control board will be supplied by the two fan tray +12V power supplies located in the cabinet #1 bulk converter assembly.
The two supplies are used for redundancy, not because of control board power requirements.

1.1.2 Each supply will output a "AC FAIL" signal to the control board should the incoming AC level drop below 180 Vac. (Low = fail.)

1.1.3 These power supplies will run off the incoming 220 Vac line.

1.2 FAN ASSEMBLY POWER

1.2.1 Power to the fan tray assemblies in each cabinet will be supplied by two +12V power supplies located in each respective cabinet.
One supply will power two upper fan tray assemblies and the other supply will power two lower fan tray assemblies.
The intent of this design is such that if one power supply fails, the cabinet will still have both upper or both lower fan trays operating.
As noted in 1.1.1 above, both power supplies will be located at the top of each cabinet, in the bulk converter module.

1.2.2 These power supplies will run off the 220 Vac line as stated in 1.1.3 above.

1.3 BATTERY BACKUP

1.3.1 The control board will utilize a externally mounted battery pack capable of supplying power for 72 hours to the control circuitry should AC power be lost.

1.3.2 This battery pack will consist of four 1.2V rechargeable D size nickel cadmium batteries connected in series. Recharge time will be 35 hours of normal system operation.

1.3.3 Battery-backed circuitry:
1. System LED's indicating failure status.
2. System fault alarm indicating failure occurrence.
3. Control board IC's.

2.0 CONTROL AND MONITORING

2.1 TEMPERATURE SENSING

The Control Board will monitor the ambient temperature at one location via one passive temperature sensor (thermistor) located above the CPU/MEMORY card cage. This location is being used as a worst case example of temperature rise.
The control board will respond to three temperature levels as follows :

2.1.1 Threshold #1 : 0 degrees C. (or an open connection.)
Lights corresponding LED. (LD37)
Sounds control board fault alarm.
Enables relay contacts for ext. alarm.

2.1.2 Threshold #2 : 45 degrees C. (113°F)
Lights corresponding LED. (LD38)
Sounds control board fault alarm.
Enables relay contacts for ext. alarm.

2.1.3 Threshold #3 : 70 degrees C. (158°F)
Lights second LED. (LD39)
Inhibit system power after time determined by JP1, JP2 or JP3.

2.1.4 Threshold levels are determined by control board resistors and may be modified.
*Note : What we are monitoring here is a condition where the lower fan filters become blocked and decrease air-flow through the CPU/MEMORY card cage. Only one location will be monitored.

2.2 UPPER FAN TRAY STATUS DESCRIPTION

2.2.1 The Control Board will monitor the status of the fans located at the top of each rack. Each rack will use one "upper fan tray assembly" consisting of 9 - 12 Vdc muffin fans with speed sensor output signal.

2.2.2 Each fan tray assembly will output one status signal. This status signal will inform the control board should (1) the RPM's of any fan drop below 50% of rated value for more than 10 seconds and (2) the voltage to any fan fail.
Number of status signals per cabinet:

Cabinets	Upper Fan Tray Modules	Status signals
1	2	2
2	4	4
3	6	6
4	8	8

The control board will report any upper fan tray failure by lighting corresponding LED(s) only.

2.3 LOWER FAN TRAY STATUS DESCRIPTION

2.3.1 The Control Board will monitor the status of the fans located at the bottom of each rack. Each rack will use one "lower fan tray assembly" consisting of 9 - 12 Vdc muffin fans with speed sensor output signal.

2.3.2 Each fan tray assembly will output one status signal. This status signal will inform the control board should (1) the RPM's of any fan drop below 50% of rated value for more than 10 seconds and (2) the voltage to any fan fail.

Number of status signals per cabinet:

Cabinets	Upper Fan Tray Modules	Status signals
1	2	2
2	4	4
3	6	6
4	8	8

The control board will report any lower fan tray failure by lighting corresponding LED(s) only.

2.4 UPPER & LOWER FAN TRAY FAILURE DESCRIPTION

2.4.1 Should a upper and lower fan tray in the same vertical rack fail, the control board will :

2.4.1.1. Light corresponding LED's.

2.4.1.2. Sound control board fault alarm.

2.4.1.3. Enable relay contacts to ext. alarm.

2.4.1.4. Inhibit system power after 0.2 seconds using JP1.
4.8 seconds using JP2.
9.6 seconds using JP3.

2.5 INCOMING AC POWER STATUS DESCRIPTION

2.5.1 Should incoming AC line voltage be lost for a period of time, the control board will react as follows :

2.5.1.1 Less than 2 seconds - LD33=ON, LD49=OFF and the control board will run off the external battery pack. When incoming power returns LD33 turns off, LD49 turns on and the control board will run off the +12V power supplies.

2.5.2 2 - 10 seconds - LD33=ON, LD49=OFF and the control board will again run off the external battery pack. LD41 - LD48 will turn off indicating that the cap box module(s) voltage has dropped to less than 240 VDC. When power returns the cap box modules must recharge.

2.5.3 Longer than 10 seconds - the control board will trip the input AC circuit breaker after time determined by JP1, JP2, or JP3. (See 2.4.1.4 above)
The control board will now indicate loss of AC power via battery backed LED LD33.
To restart system the main breaker must be enabled.

3.0 SYSTEM CONTROL FUNCTIONS

3.1 LEVEL I CONTROLS DESCRIPTION (Accessible to user)

3.1.1 MAIN BREAKER TRIP : Large pushbutton switch located at the top of the frame. This switch will trip the incoming AC main breaker.

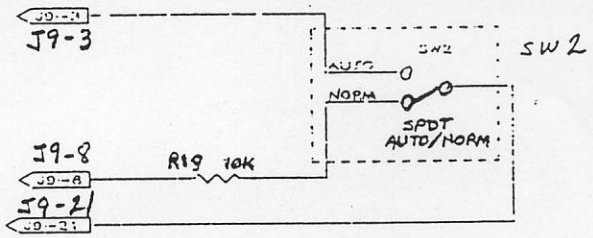
3.1.2 MAIN BREAKER RESET : The main breaker is reset by its contacter located at the bottom of the power distribution and control module.

3.1.3 LED/FAULT ALARM TEST : Pushbutton switch allowing the user to test all the system LED's as well as the system fault alarm.
Location will be on control board.

3.2 LEVEL II CONTROLS DESCRIPTION (Service personnel)
(All LEVEL II controls will be hidden from user behind service door.)

3.2.1 AUTOBOOT/NORMAL : SPDT switch provided on control board. The normal condition will have a series 10K resistor.

3.2.1.1 Circuit diagram :

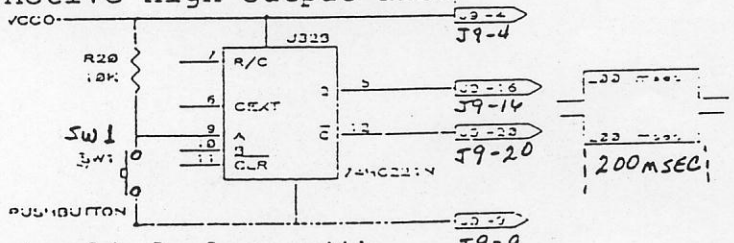


3.2.1.2 This switch is isolated from the control board circuitry.

3.2.1.3 Interfacing to this switch is through control board connector J9.

3.2.2 RESET (VME) : Pushbutton momentary switch used to initiate a one-shot circuit with an output pulse of 200 msec. active low. (Active high output also available.)

3.2.2.1 Circuit diagram :



3.2.2.2 Vcc and ground will be supplied along with the logic signals.

3.2.2.3 Connections to this switch is through control board connector J9.

3.2.3 CPU +/- 10% VOLTAGE MARGIN SWITCH : When enabled it will allow the CPU voltage level to be adjusted from the nominal value (adjustable at the DC/DC Converter), to either +10% or -10% of the nominal value via the CPU adjustment control.
The CPU voltage level may be measured from the available control board test points, these measurement points are at the CPU load.
When this switch is enabled the "Maintenance Mode" LED will light. This is to remind the maintenance person that this switch is enabled.

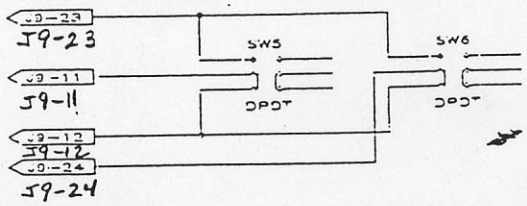
3.2.4 MEMORY +/- 10% VOLTAGE MARGIN SWITCH : When enabled it will allow the MEMORY voltage level to be adjusted from the nominal value (adjustable at the DC/DC Converter), to either +10% or -10% of the nominal value via the MEMORY adjustment control.
The MEMORY voltage level may be measured from the available control board test points, these measurement points are at the MEMORY load.
When this switch is enabled the "Maintenance Mode" LED will light. This is to remind the maintenance person that this switch is enabled.

3.2.5 CLOCK SELECT : Two switches will be used for selecting clock speeds. The manner in which the switches are set determines the clock speed.
Assuming down is zero then :

00 = Normal
01 = Slow
10 = Fast
11 = External

3.2.5.1 The clock select switches will light the "Maintenance Mode" LED if not in the normal = 00 setting.

3.2.5.2 Circuit diagram :

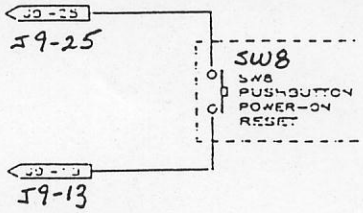


3.2.5.3 These switches are isolated from the control board circuitry.

3.2.5.4 Interfacing to these switches is through connector J9.

3.2.6 POWER-ON RESET : Pushbutton normally open momentary switch used to initiate the power-on reset function.

3.2.6.1 Circuit diagram :



3.2.6.2 The reset action is a result of the switch contact closure.
3.2.6.3 No de-bounce circuitry will be used.
3.2.6.4 This switch will be isolated from all control board circuitry.
3.2.6.5 Interfacing to this switch is through connector J9.

4.0 DISPLAY FUNCTIONS

4.1 FAILURE INDICATOR DESCRIPTION
(24 battery backed amber LED's.)

4.1.1 LOSS OF AC POWER : LD33 indicating loss of incoming AC power.
4.1.2 MEMORY +6V FAULT : LD34 indicating loss of +6V on MEMORY board.
4.1.3 CPU +5V FAULT : LD35 indicating loss of +5V on CPU board.
4.1.4 LOSS OF +12 Vdc : LD36 indicating the loss of the +12 Vdc to the control board.
4.1.5 TEMPERATURE FAULT-1 : LD37 indicating a drop in ambient temperature past threshold #1 (0 degrees C.) or a open in the cabling to the temperature sensor.
4.1.6 TEMPERATURE FAULT-2 : LD38 indicating a rise in ambient temperature past threshold #2. (~45 degrees C.)
4.1.7 TEMPERATURE FAULT-3 : LD39 indicating a rise in ambient temperature past threshold #3. (~70 degrees C.)
4.1.8 MAINTENANCE MODE : LD40 will light under the following conditions :
4.1.8.1 CPU Margin switch enabled.
4.1.8.2 MEMORY Margin switch enabled.
4.1.8.3 Clock select not set to normal setting.

4.1.9 -
4.1.25 UPPER FAN TRAY ASSEMBLY FAILURE
Indicating the current state of one or more upper fan tray assemblies.
Failures on left side of cabinet (when facing the control board) will be displayed on the left side of the control board.
LD1 : Left upper, cab 1.
LD3 : Left upper, cab 2.
LD5 : Left upper, cab 3.
LD7 : Left upper, cab 4.
LD2 : Right upper, cab 1.
LD4 : Right upper, cab 2.
LD6 : Right upper, cab 3.
LD8 : Right upper, cab 4.

4.1.26 -
4.1.41 LOWER FAN TRAY ASSEMBLY FAILURE
Indicating the current state of one or more lower fan tray assemblies.
Failures on right side of cabinet (when facing the control board) will be displayed on the right side of the control board.
LD9 : Left lower, cab 1.
LD11 : Left lower, cab 2.
LD13 : Left lower, cab 3.
LD15 : Left lower, cab 4.
LD10 : Right lower, cab 1.
LD12 : Right lower, cab 2.
LD14 : Right lower, cab 3.
LD16 : Right lower, cab 4.

4.2 ENERGY STORAGE BANK INDICATOR DESCRIPTION
(4 battery backed green LED's.)

4.2.1 LD41 : Indicating energy storage bank #1 good.
4.2.2 LD43 : Indicating energy storage bank #2 good.
4.2.3 LD45 : Indicating energy storage bank #3 good.
4.2.4 LD47 : Indicating energy storage bank #4 good.

4.3 SYSTEM "GOOD" GREEN LED (LD49) DESCRIPTION :
4.3.1 The six functions below must be good for LD49 to light.
_ Incoming AC.
_ CPU voltage good.
_ MEMORY voltage good.
_ +12 Vdc good.
_ All energy storage banks are above 200 Vdc.
_ 3 minute timer has timed out.

4.4 FAULT ALARM DESCRIPTION
The fault alarm will indicate certain system failure modes (stated below) via an pulsing 3.7 KHz. piezoelectric ceramic alarm.
This alarm is battery backed.
Pulsing duty cycle : On = 1.0 sec. Off = 10 sec.

4.4.1 Indicating Loss of AC Power.
4.4.2 Indicating +6V Memory fault.
4.4.3 Indicating +5V CPU fault.
4.4.4 Loss of 12 Vdc control power.
4.4.5 Temperature fault-1.
4.4.6 Temperature fault-2.
4.4.7 Upper & Lower fan failure in same vertical rack.

4.5 EXTERNAL ALARM DESCRIPTION

4.5.1 The control board will incorporate a DPDT relay for controlling two external alarms. The two contacts can either close or open to signal a fault condition.

4.5.2 Connections are made via control board connector J12.

4.5.3 The relay contacts will change states for all the fault conditions listed in 4.3.

4.6 VISUAL INTERFACE DESCRIPTION

4.6.1 The LED's will be displayed to the user as shown on drawing #90032900. (SPI# 100015)
The LED's for fan status will be staggered so that a 4 cabinet system would use the full length of the display area.

4.6.2 Each LED will have a description of the function it is displaying next to it.

4.7 COMPUTER INTERFACE DESCRIPTION

4.7.1 The control will incorporate a DB25 connector interface (J10) allowing the user to monitor system functions. Following is a description of these output signals :

Pin 1	: +5 Vdc.		
Pin 2	: Memory failure	: Low =	Voltage < 2.5 Vdc.
Pin 3	: +12V failure	: Low =	Voltage < 2.0 Vdc.
Pin 4	: Temp failure #2	: Low =	Temp > 45 degrees C.
Pin 5	: Maintenance mode	: Low =	Margins enabled or - CLK select not normal.
Pin 6	: Cap bank failure	: Low =	one or more banks - below 200 Vdc.
Pin 10	: Ground		
Pin 14	: AC failure	: Low =	Incoming AC < 180 Vac.
Pin 15	: CPU failure	: Low =	Voltage < 2.0 Vdc.
Pin 16	: Temp failure #1	: Low =	0 degrees C and/or - open connection.
Pin 17	: Temp failure #3	: Low =	Temp > 70 degrees C.

5.0 MECHANICAL ISSUES

5.1 CONTROL BOARD DESCRIPTION
Length : 12.0", Width : 5.8", Depth : 4.0"

5.2 CONNECTOR INTERFACE DESCRIPTION

5.2.1 PC BOARD : 4 PC board mounted female DB9 connectors (1 per cabinet for the fans) and 4 PC board mounted female DB25 connectors.

5.2.2 CONNECTOR KEYING : These connectors shall be keyed with nylon plug to prevent plugging into wrong control board connector.

TROUBLESHOOTING HINTS/PROCEDURES

HI VOLT DC FAULTS

If you suspect that you have a problem with the Capacitor Module you can isolate it from the HI voltage DC buss and run with it disconnected until a replacement can be installed. With it disconnected you will lose the ride through capability and the capacitor Bank ready light will not light on the control panel.
To isolate disconnect J101 and J102 from the capacitor bank (refer diag. 1).

If the output from the Bulk Converter is bad, and your system is lightly loaded, you may be able to run all of the supplies directly from AC temporarily. This should not be done for any length of time, as it affects the power conditioning characteristics of the system, but may be used as an Emergency procedure, or as an isolation technique.

1) Ensure system breakers are off and that high voltage bus has had sufficient time to discharge to less than 12v dc.

2) Remove front and rear skins.

3) Remove safety panels, front and rear, to expose voltage distribution plugs.

4) Measure hi voltage bus with a DVM to verify discharge.

5) Unplug all hi voltage power supplies from the distribution plugs.

6) Connect adaptor cables (P/N ????????) from the power supply lead to a convenient ac distribution point (adjacent to hi volt plugs).

7) Disconnect the power supply inhibit cables from the distribution plugs and connect loopback plug (P/N ????????) to the power supply inhibit cable.

8) Disconnect J203A and J203B from the Bulk Converter to isolate hi volt bus and to prevent attempted charge of the Capacitor ride-thru module.

9) Replace panels and skins, power system up as normal.

*NOTE:- You will not get the SYSTEM READY indicator or capacitor bank ready indicator.

INHIBIT FAULTS

The power supply inhibit line is used to prevent too much current draw through the bulk converter during power on. The bulk converter controls the inhibit line and will inhibit the output of the DC supplies while the Hi DC voltage is less than approx. 180 volts. The power supplies are enabled by supplying a ground through the inhibit line. Should the inhibit line for a particular supply be broken, either through a loose plug or a broken wire, then that individual supply will not allow his output.
Due to the inhibit lines all being commoned together, if one individual line is shorted to ground, through insulation breakdown or reversal of plug connections, then all supplies will be affected. They will all try to enable their outputs immediately and the bulk converter may detect an over current condition, dependent upon configuration. The symptoms of this are that the Hi volt DC does not appear to come up, the fans run and there are no alarms. The immediate assumption may be that there is a fault with the Hi volt DC, where in actual fact the problem could be a trapped inhibit wire.

12 VOLT DC

The Bulk Converter Module contains two 12 volt dc suplies. These supplies are used to provide power to the various cooling fans utilised in the cabinet. There are 5 groups of fans these supplies service, left hand upper and lower fan trays, right hand upper and lower fan trays and the Capacitor Module fans. One of the two supplies provide power to the right hand upper tray and to the left hand lower tray, the other supplies the right hand lower tray and the left hand upper tray, while in the Capacitor Module they are commoned together to supply its fans. Therefore, if one of the two supplies dies, then the system can continue operation until the Bulk Converter can be replaced.

INPUT A/C BREAKER TRIPPING

Depending on how often or quickly the breaker is tripping there are several problem isolation techniques you may use.

BREAKER TRIPPING IMMEDIATELY

If the breaker trips immediately it is set then there are 3 possible causes,
1) Too much current flowing through the breaker due to a short circuit in harness etc.
2) Short across breaker from the EPO button due to it being depressed, faulty switch or harness.
3) Trip signal being sent to breaker due to fault sense from Control Panel or a faulty opto-isolator board in incoming AC module.

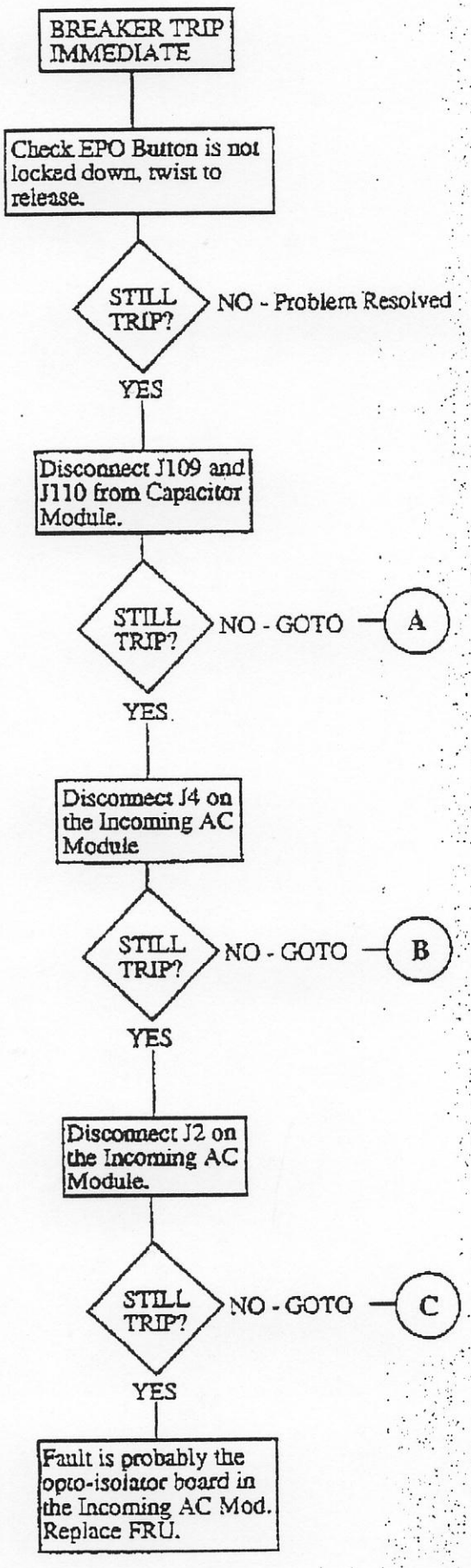
To aid problem isolation follow power fault flow PFF1.

BREAKER TRIPPING INTERMITTENTLY

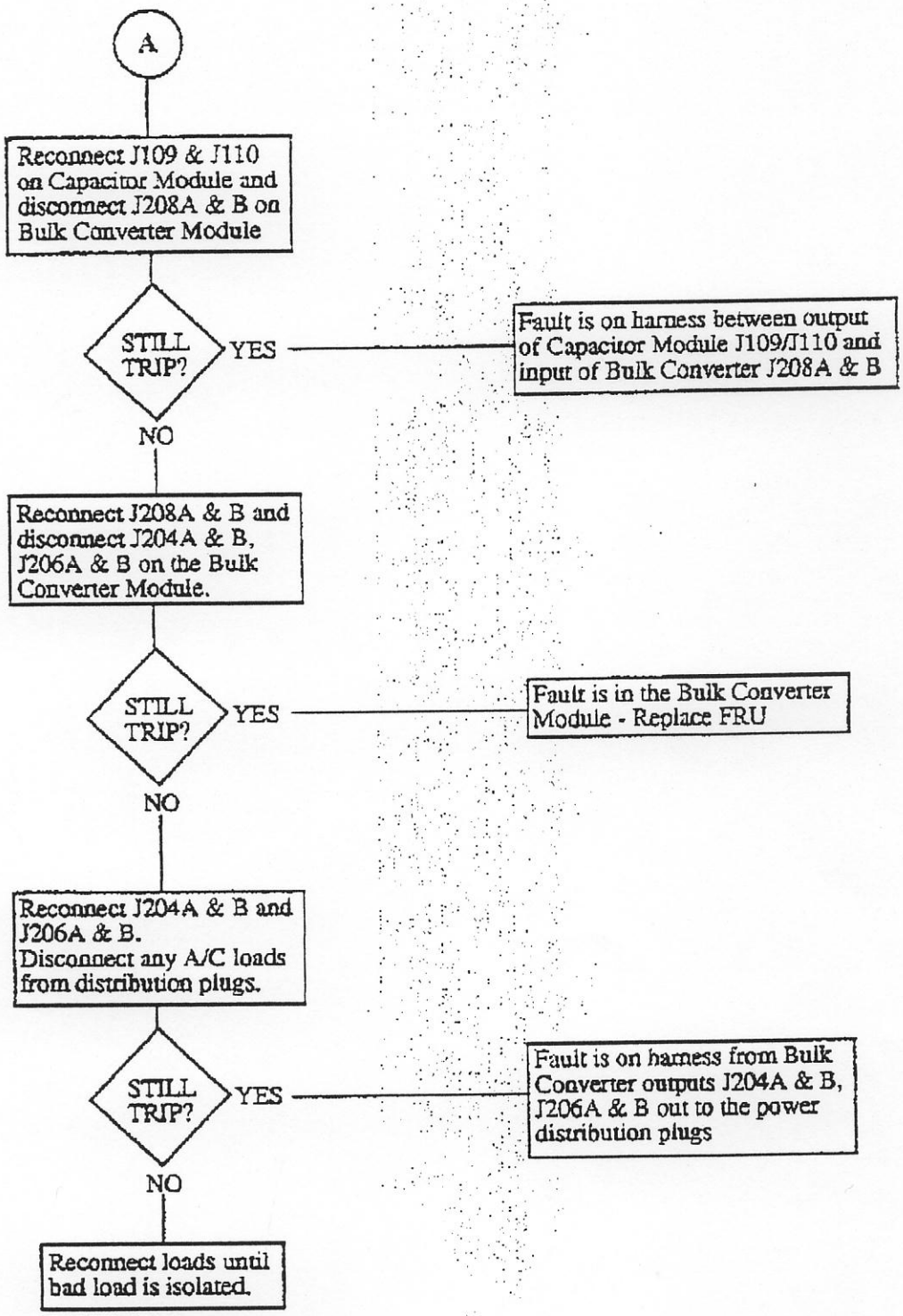
Intermittent breaker trips can be caused by the same scenarios as for the immediate trips, but obviously requires a slightly different approach to isolation.

1) Check the control panel for any indications as to a possible valid cause.
2) Check wire harnesses from EPO button, control panel J1, A/C distribution etc. for cuts, brakes or insulation damage.
3) Consider using a power monitor for measuring the system input voltages for spikes, brownouts etc.
4) Consider replacement of the Incoming AC Module and the Control Panel Module for isolation.

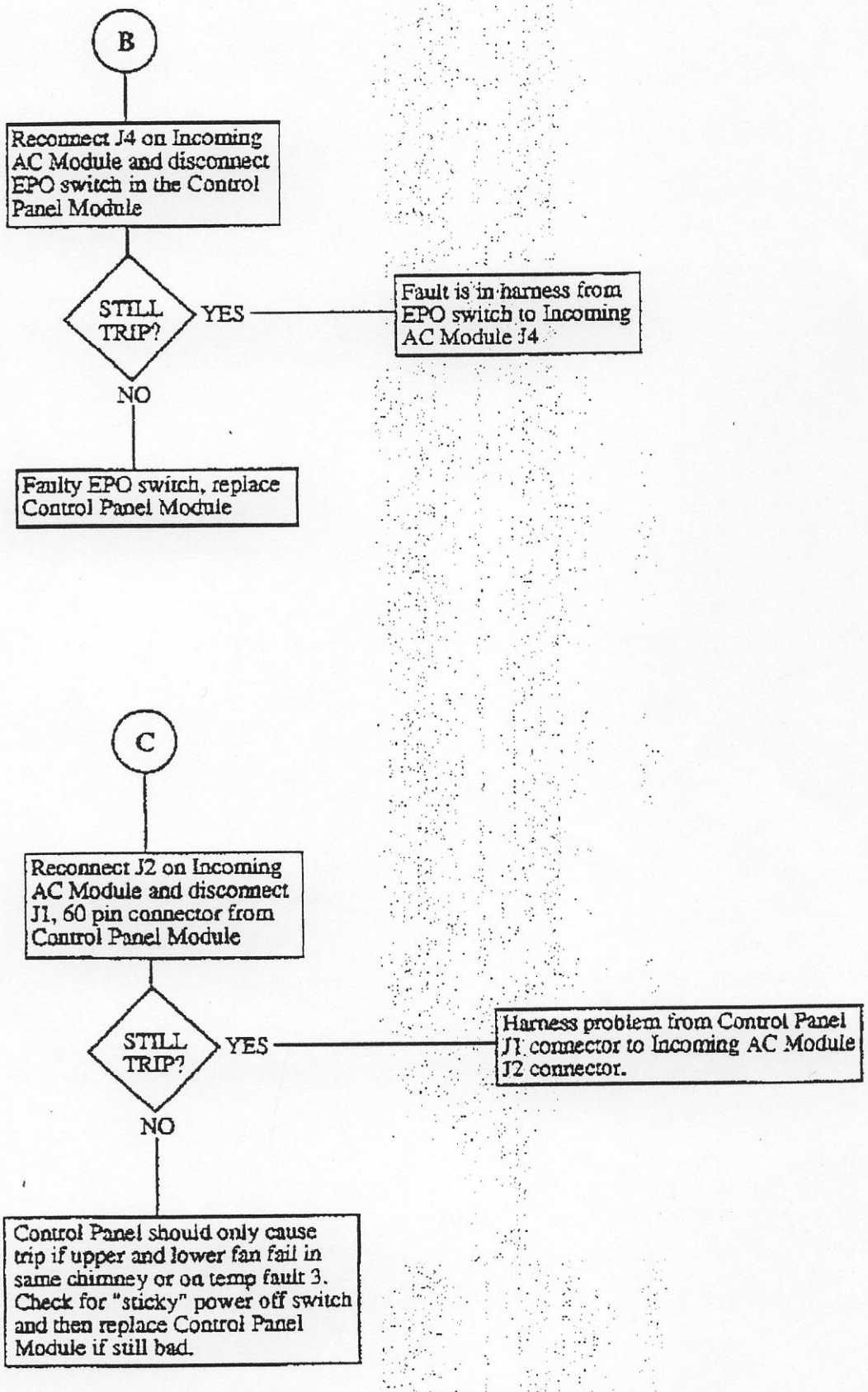
POWER FAULT FLOW - 1



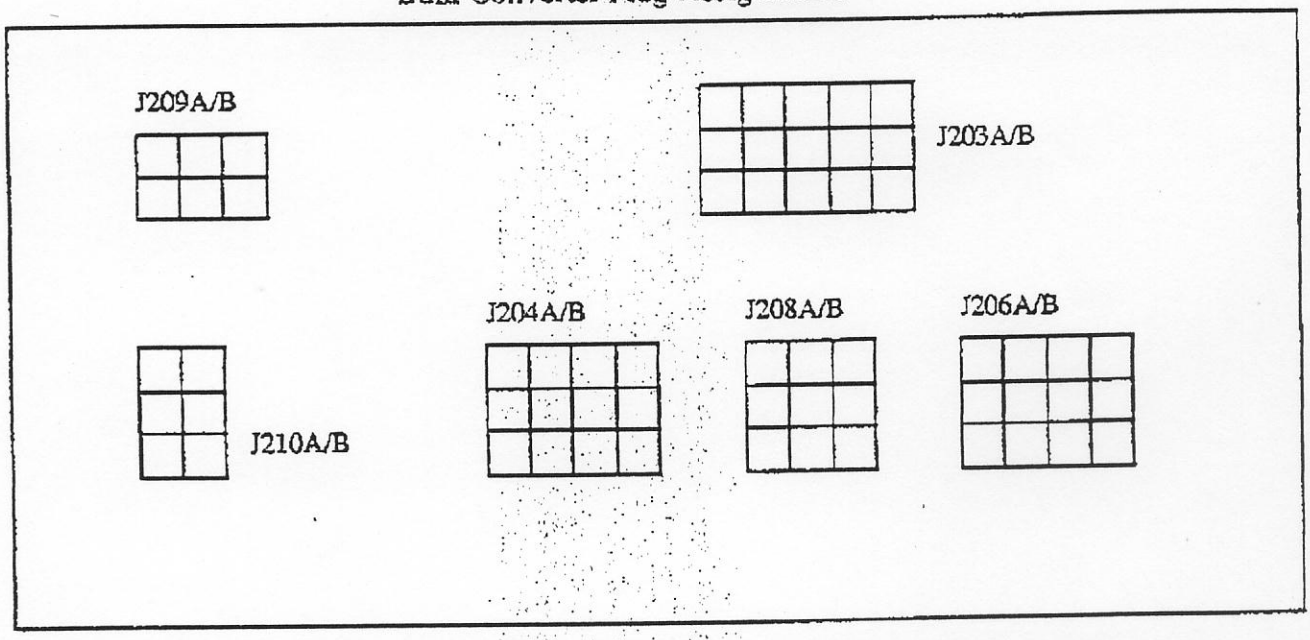
POWER FAULT FLOW - 1



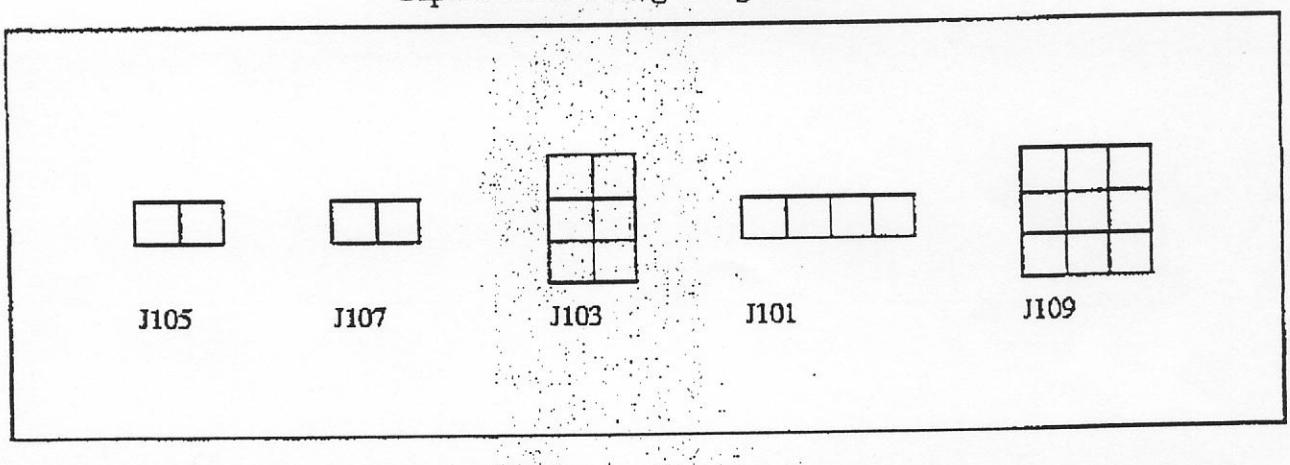
POWER FAULT FLOW - 1



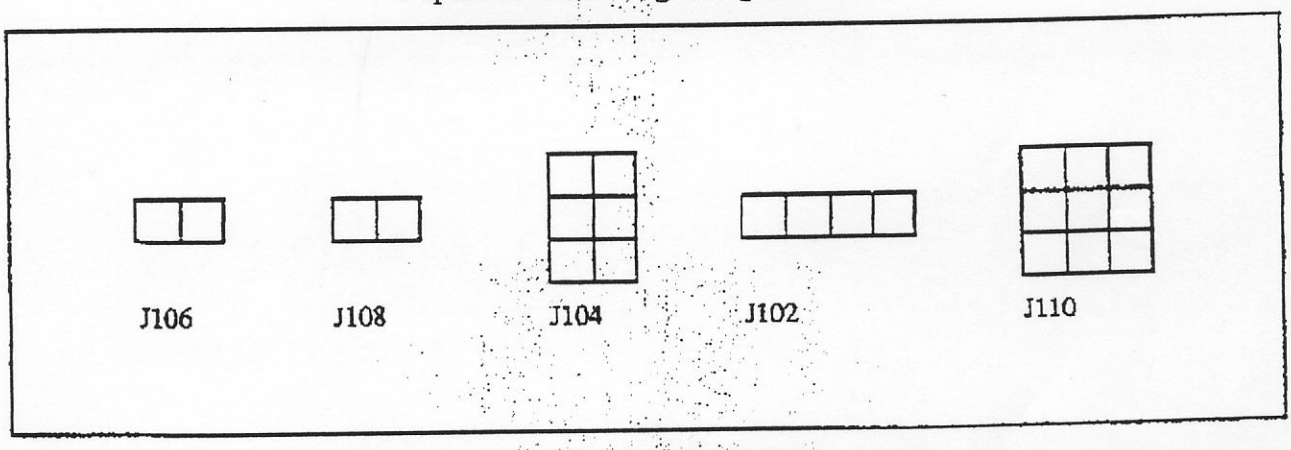
Bulk Converter Plug Assignments



Capacitor Bank Plug Assignments



Capacitor Bank Plug Assignments



POWER SYSTEM PLUG ASSIGNMENTS

BULK CONVERTER

J203A/B — HIGH VOLTAGE OUTPUT

1	Positive
2	Ground
3	Negative
4	Positive
5	Ground
6	Negative
7	Positive
8	Ground
9	Negative
10	Positive
11	Ground
12	Negative
13	Positive
14	Ground
15	Negative

J204A/B — AC OUTPUT

1	L1
2	Ground
3	L2
4	L1
5	Ground
6	L2
7	L1
8	Ground
9	L2
10	L1
11	Ground
12	L2

206A/B — AUX AC OUTPUT

1	L1
2	Ground
3	L2
4	L1
5	Ground
6	L2
7	L1
8	Ground
9	L2
10	L1
11	Ground
12	L2

J208A/B — FILTERED AC INPUT

1	L1
2	Ground
3	L2
4	
5	
6	
7	L1
8	Ground
9	L2

J209A

1	Inhibit return
2	Inhibit
3	+12v - 1
4	Return - 1
5	+12v - 2
6	Return - 2

J209B

1	Inhibit Return
2	Inhibit
3	+12v - 2
4	Return - 2
5	+12v - 1
6	Return - 1

J210A/B	1 -	AC fail - 1
	2 -	+12v - 1
	3 -	Return - 1
	4 -	AC fail - 2
	5 -	+12v - 2
	6 -	Return - 2

CAPACITOR RIDE-THRU MODULE

J101,J102	1 -	Positive
	2 -	Ground
	3 -	
	4 -	Negative

HIGH VOLTAGE DC INPUT

J103	1 -	Discharge control
	2 -	Discharge control return
	3 -	
	4 -	
	5 -	Capacitor bank ready
	6 -	Capacitor bank ready ground

J104 1-6 not used

J105,J106	1 -	Inhibit return
	2 -	Inhibit

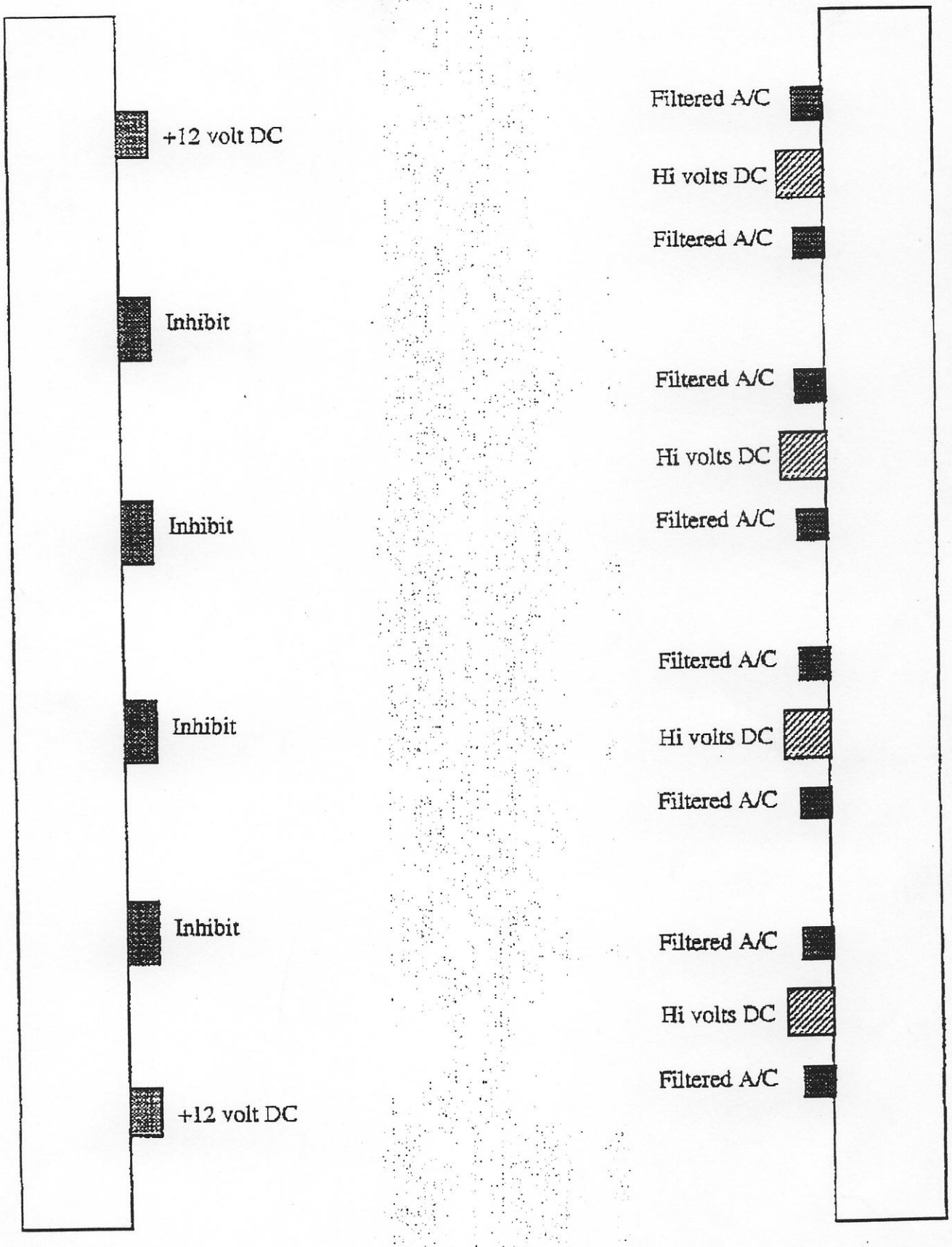
J107	1 -	+12v - 2
	2 -	Return - 2

J108	1 -	+12v - 1
	2 -	Return - 1

J109,J110	1 -	L1
	2 -	Ground
	3 -	L2
	4 -	
	5 -	
	6 -	
	7 -	L1
	8 -	Ground
	9 -	L2

AC POWER OUTPUT

DISTRIBUTION PLUG ASSIGNMENTS



Heurikon

SLAVE

FPI

CENTRONICS

SERIAL

Slave jumper
(2nd from top)

rcmd ios1 iobbtest

rcmd ios1 iocctest

FDDI

Optical bypass

S TX

Phy A

P RX

P TX

Phy B

S RX

View from the inside of FDDI bulkhead

WHITE A

WHITE B

B0

A0

BLUE B

BLUE A

Primary OUT

Secondary IN

B

Secondary OUT

Primary IN

A

FDDI DUAL SWITCH MODULE

1 P Tx PHY B Tx

2 S Rx PHY B Rx

Station Connector

3 S Tx PHY A Tx

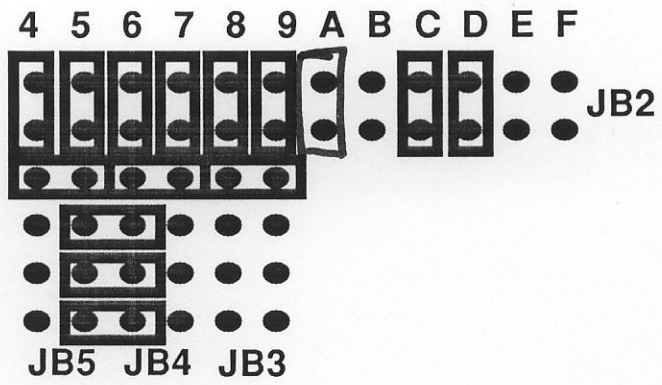
4 P Rx PHY A Rx

DC - 4 Base address selection

DC - 4
1st Controller

(Address CC00)

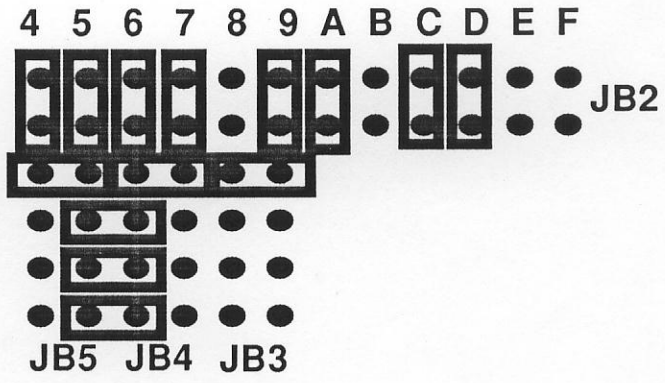
Jumper installed = 0
Jumper removed = 1

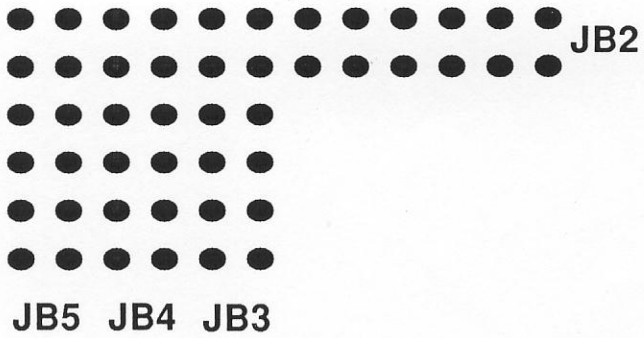


DC - 4
2nd Controller

(Address C900)

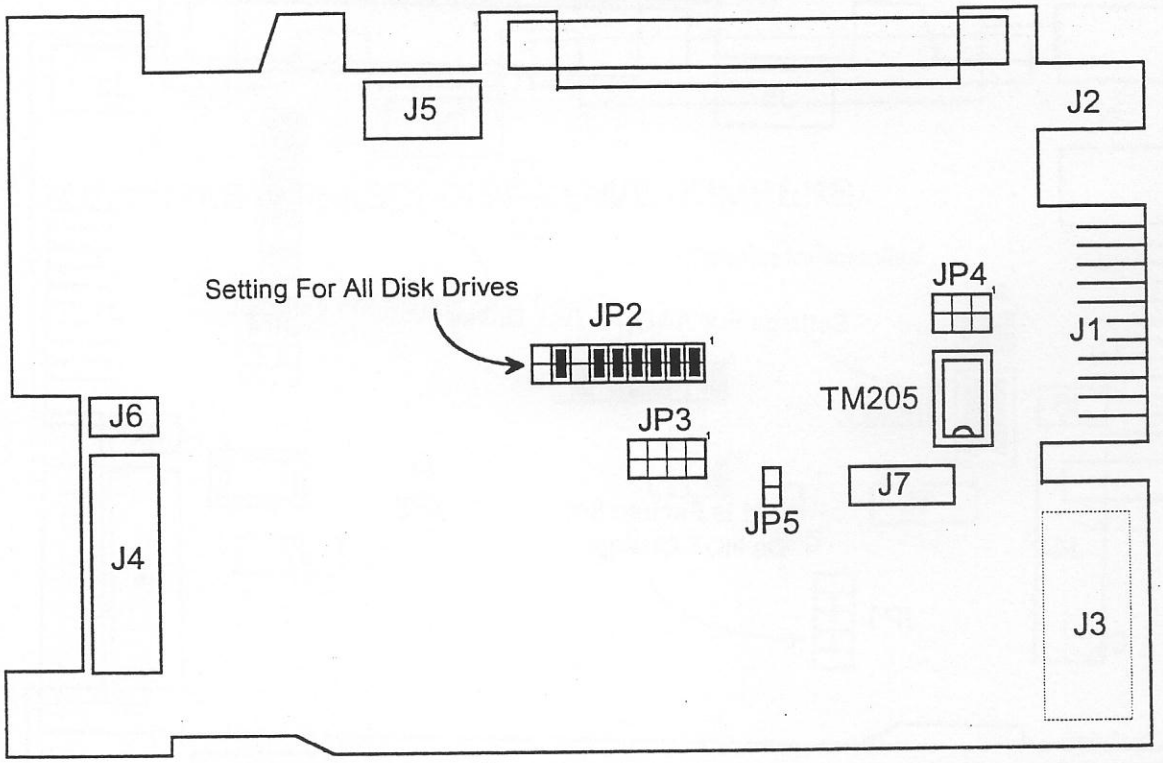
Jumper installed = 0
Jumper removed = 1





ESDI DISK DRIVE JUMPERS, DD-3 (DS-3 Configuration)

(Manufacturer Physical Layout #1)



CRI Jumpers for Logical "0"

JP3 Disk Drive Logical Address

JP4 Terminator Switch I

JP5 Terminator Switch II

TM205 Dual Inline Package (DIP) Terminator. "Terminator Installed"

CRI Jumpers for Logical "1"

JP3 Disk Drive Logical Address

JP4 Terminator Switch I

JP5 Terminator Switch II

TM205 Dual Inline Package (DIP) Terminator. "Terminator NOT Installed"

CRI Jumpers for Logical "2"

JP3 Disk Drive Logical Address

JP4 Terminator Switch I

JP5 Terminator Switch II

TM205 Dual Inline Package (DIP) Terminator. "Terminator NOT Installed"

CRI Jumpers for Logical "3"

JP3 Disk Drive Logical Address

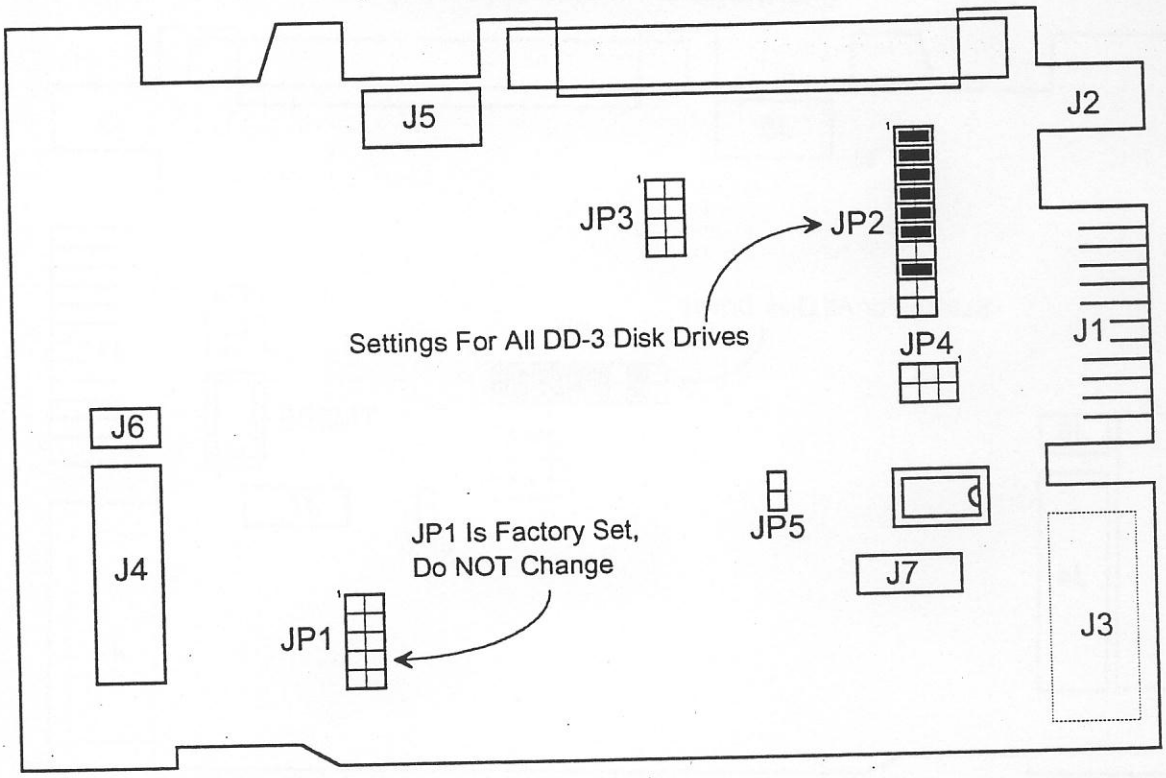
JP4 Terminator Switch I

JP5 Terminator Switch II

TM205 Dual Inline Package (DIP) Terminator. "Terminator NOT Installed"

ESDI DISK DRIVE JUMPERS, DD-3 (DS-3 Configuration)

(Manufacturer Physical Layout #2)



CRI Jumpers for Logical "0"

JP3 Disk Drive Logical Address

JP4 Terminator Switch I

JP5 Terminator Switch II

TM205 Dual Inline Package (DIP) Terminator. (Installed)

CRI Jumpers for Logical "1"

JP3 Disk Drive Logical Address

JP4 Terminator Switch I

JP5 Terminator Switch II

TM205 Dual Inline Package (DIP) Terminator. (NOT Installed)

CRI Jumpers for Logical "2"

JP3 Disk Drive Logical Address

JP4 Terminator Switch I

JP5 Terminator Switch II

TM205 Dual Inline Package (DIP) Terminator. (NOT Installed)

CRI Jumpers for Logical "3"

JP3 Disk Drive Logical Address

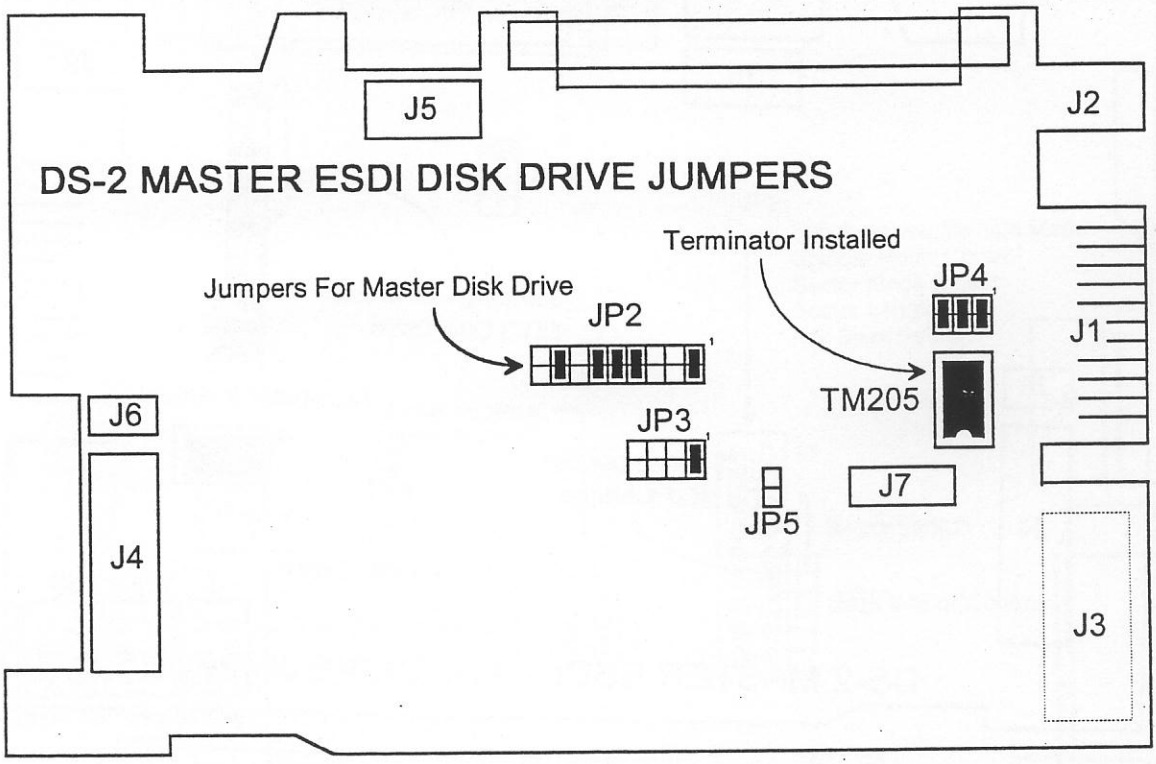
JP4 Terminator Switch I

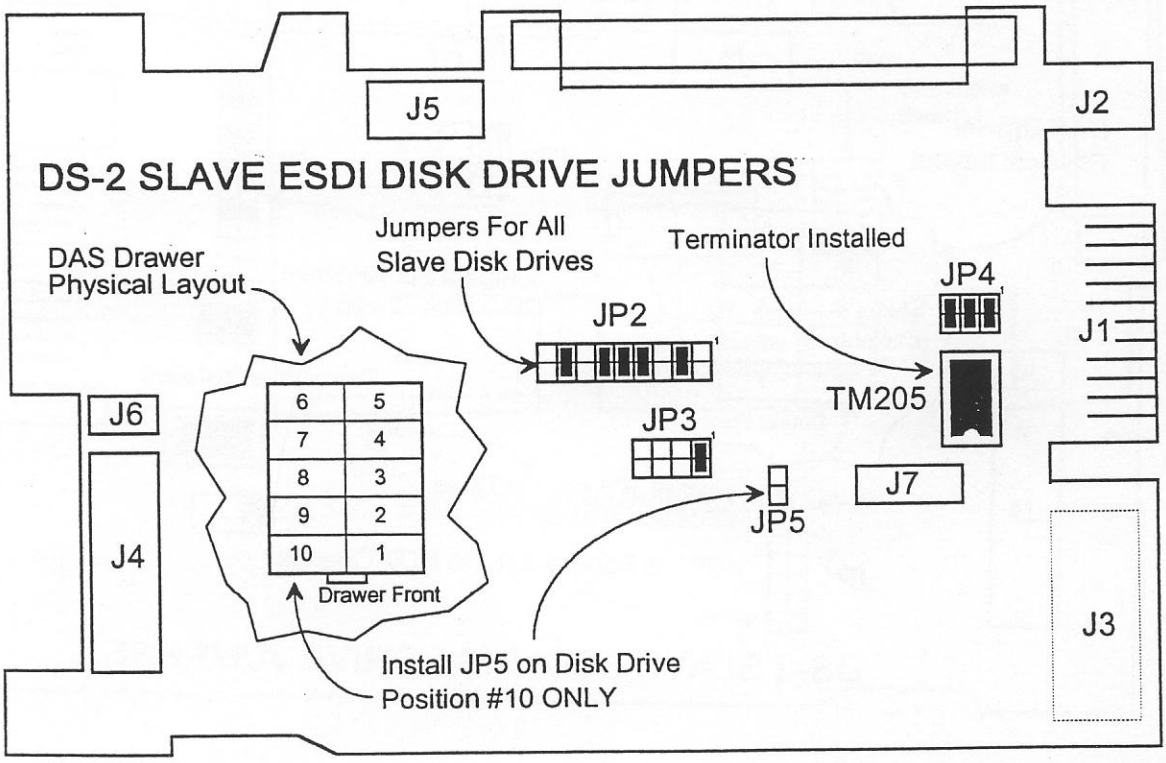
JP5 Terminator Switch II

TM205 Dual Inline Package (DIP) Terminator. (NOT Installed)

ESDI DISK DRIVE JUMPERS, DD-3 (DAS-2 Configuration)

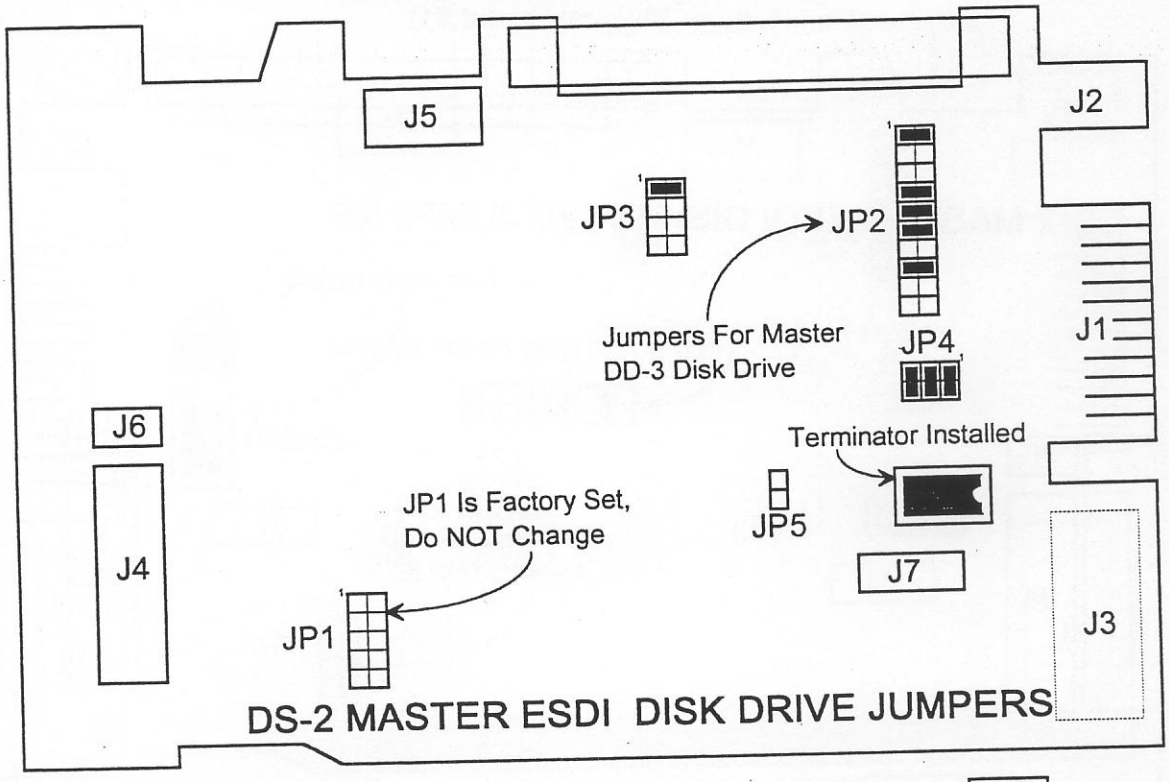
(Manufacturer Physical Layout #1)



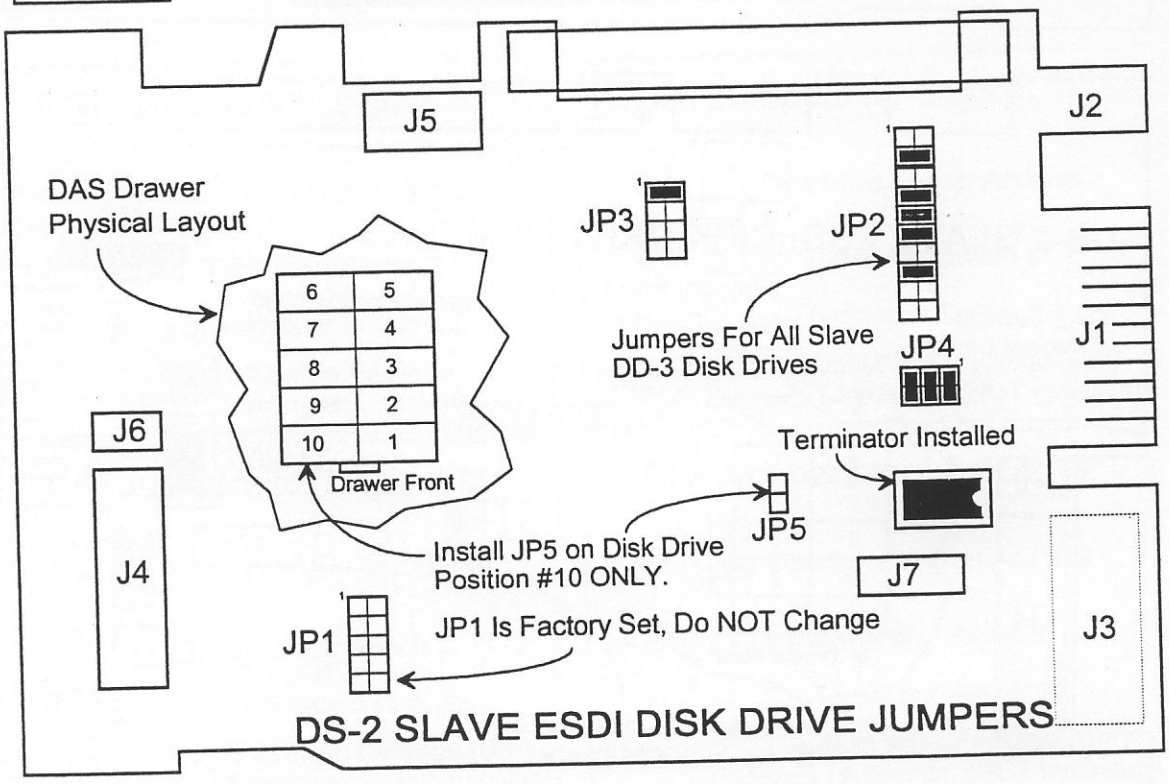


ESDI DISK DRIVE JUMPERS, DD-3 (DAS-2 Configuration)

(Manufacturer Physical Layout #2)



DS-2 MASTER ESDI DISK DRIVE JUMPERS



DS-2 SLAVE ESDI DISK DRIVE JUMPERS

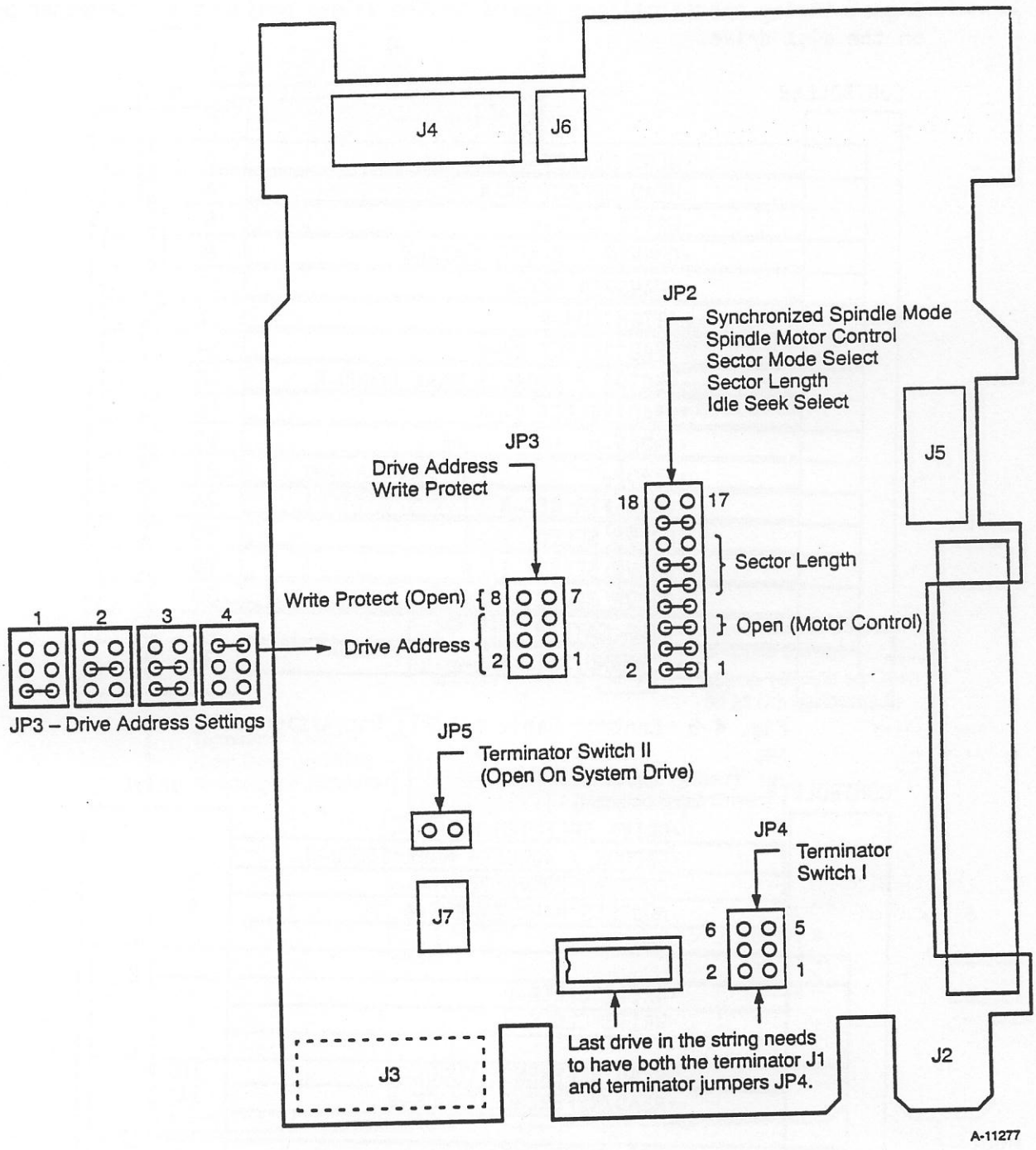


Figure 5-22. ESDI DK516 System SZ963 PCB Layout

4.3 Interface signal Description

Signal timing specifications depend on the values measured at connector pins on the disk drive.

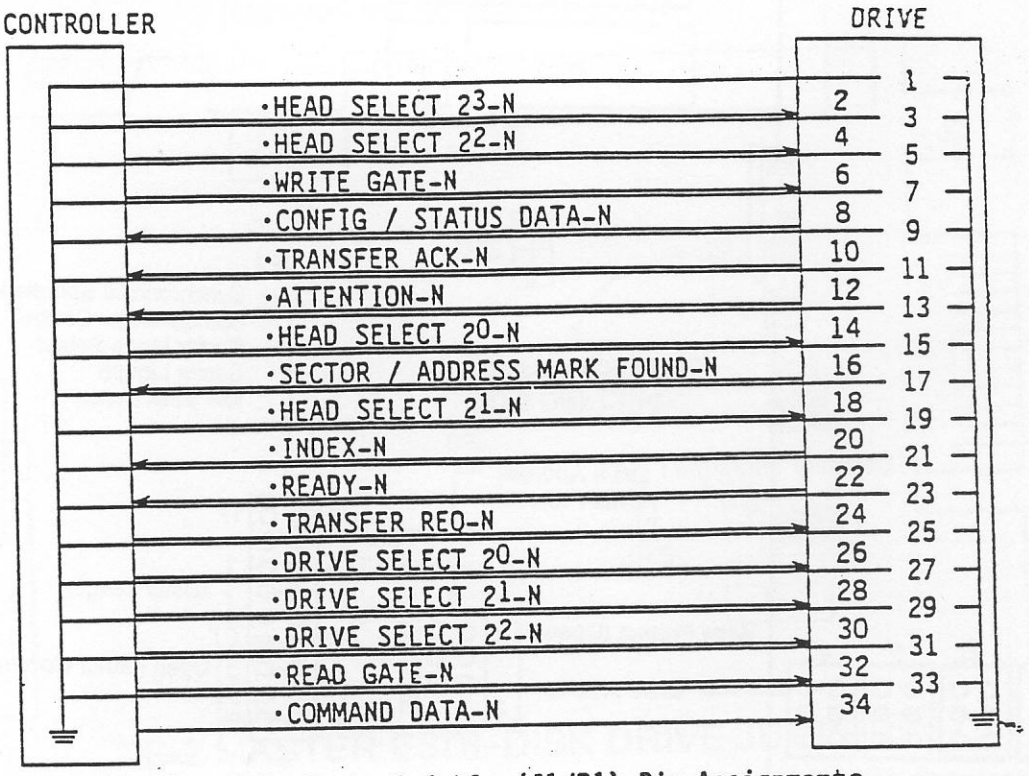


Fig. 4-5 Control Cable (J1/P1) Pin Assignments

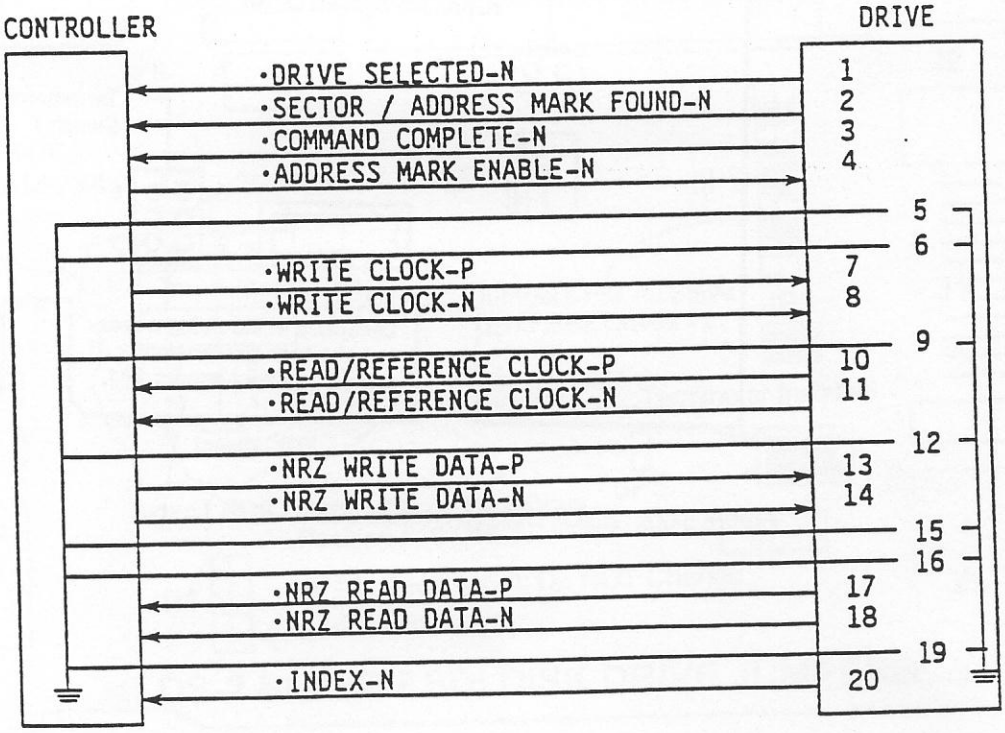


Fig. 4-6 Data Cable (J2/P2) Pin Assignments

K 2500374	SHEET NO.	REV NO.	0
	41/	Jan.20'90	

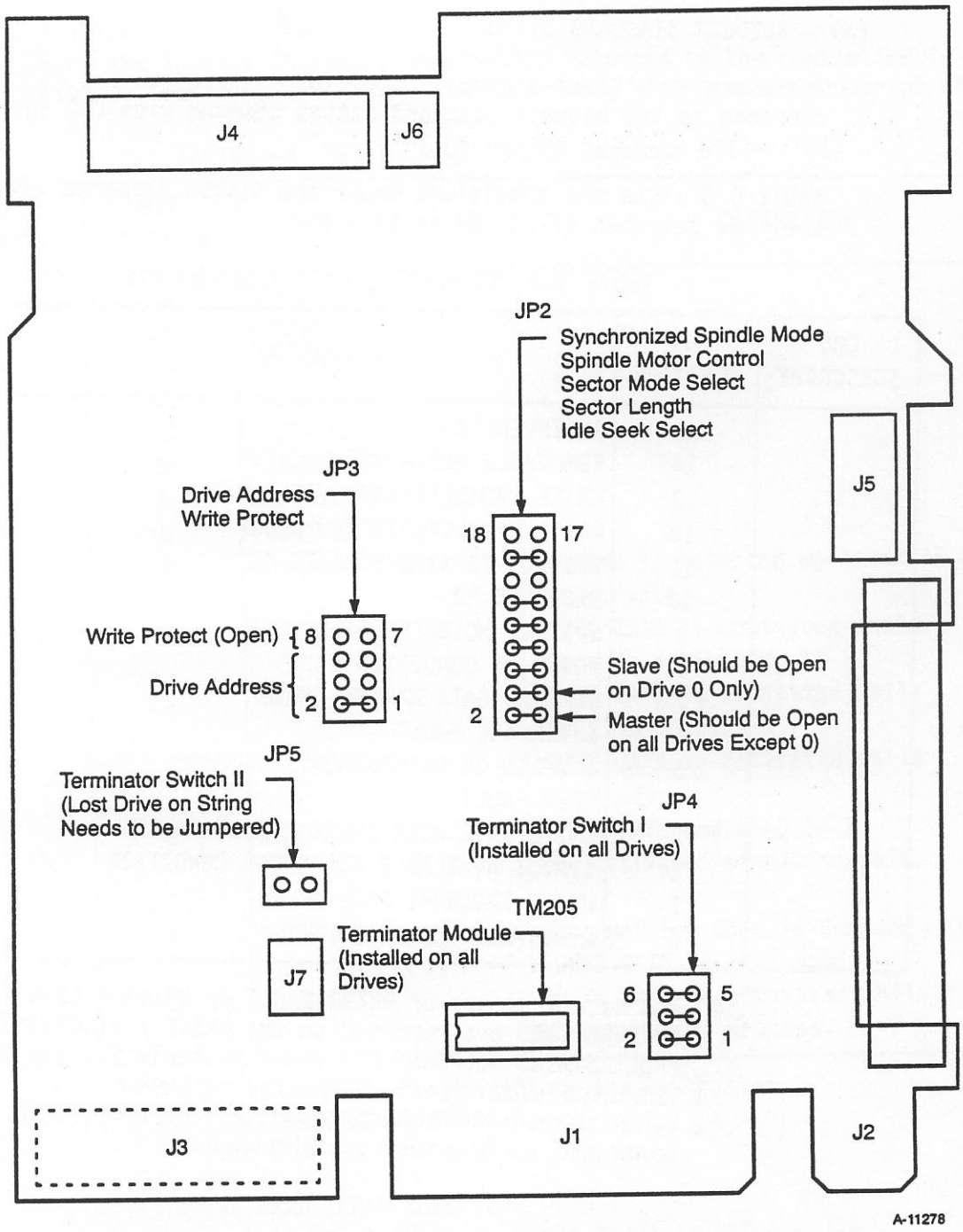


Figure 5-23. ESDI DK516 DAS SZ963 PCB Layout

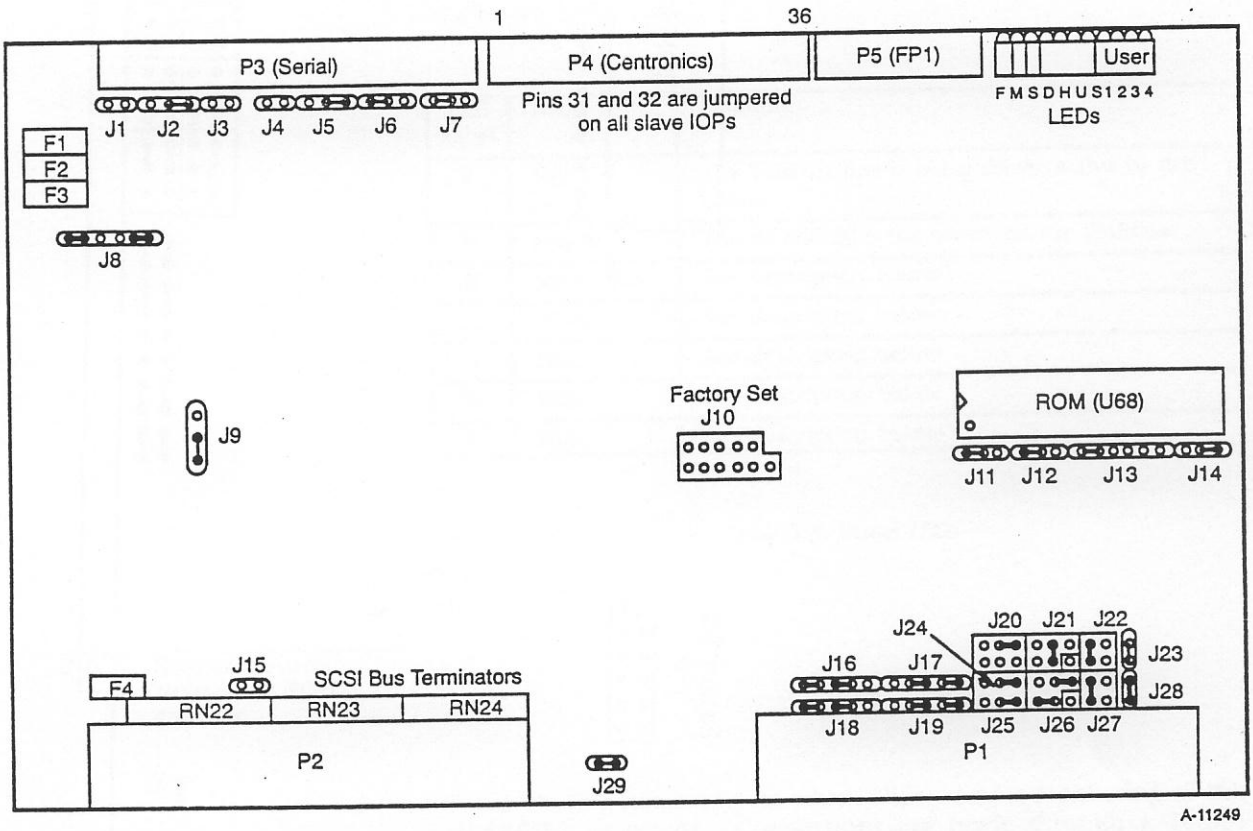
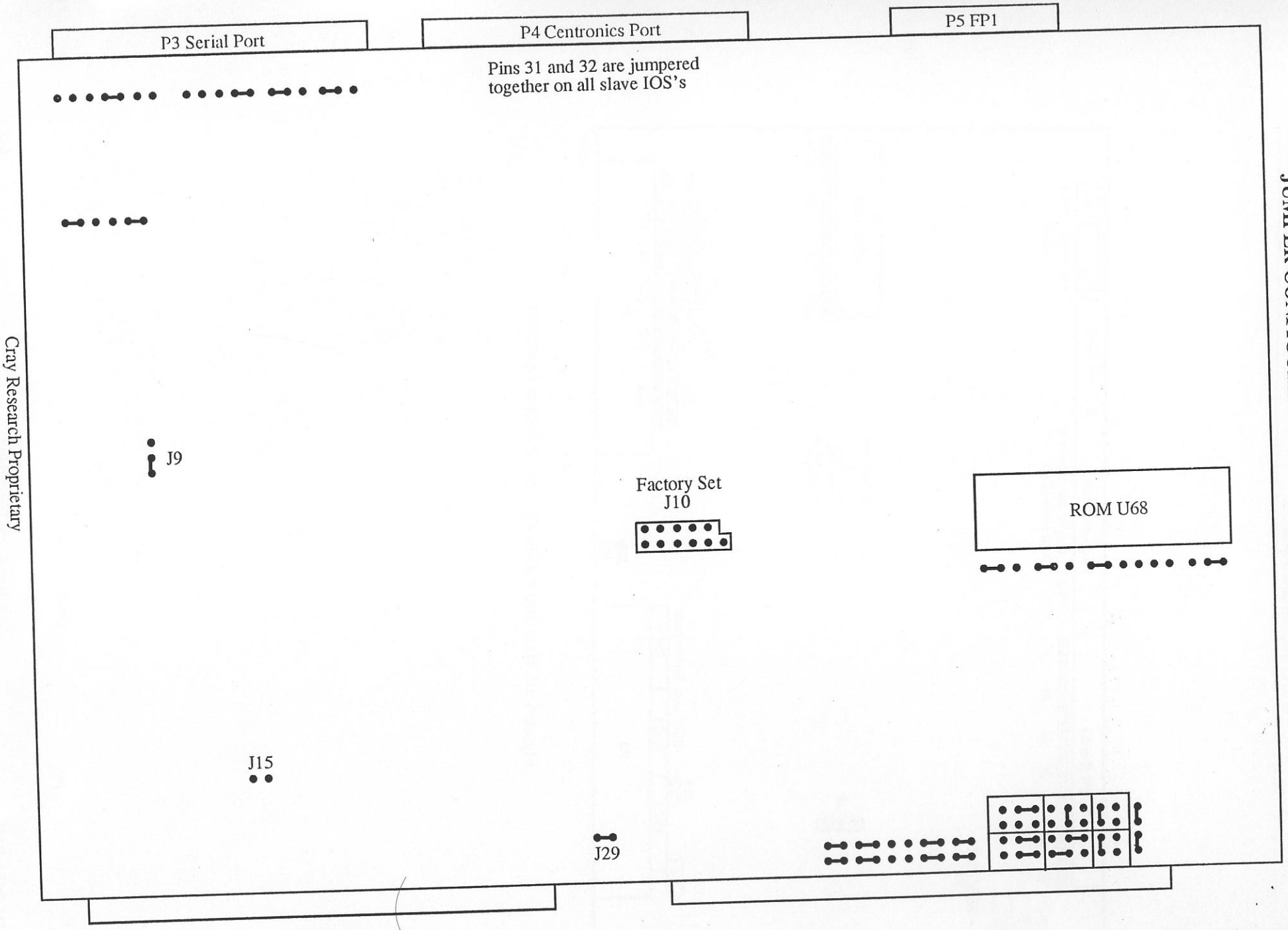
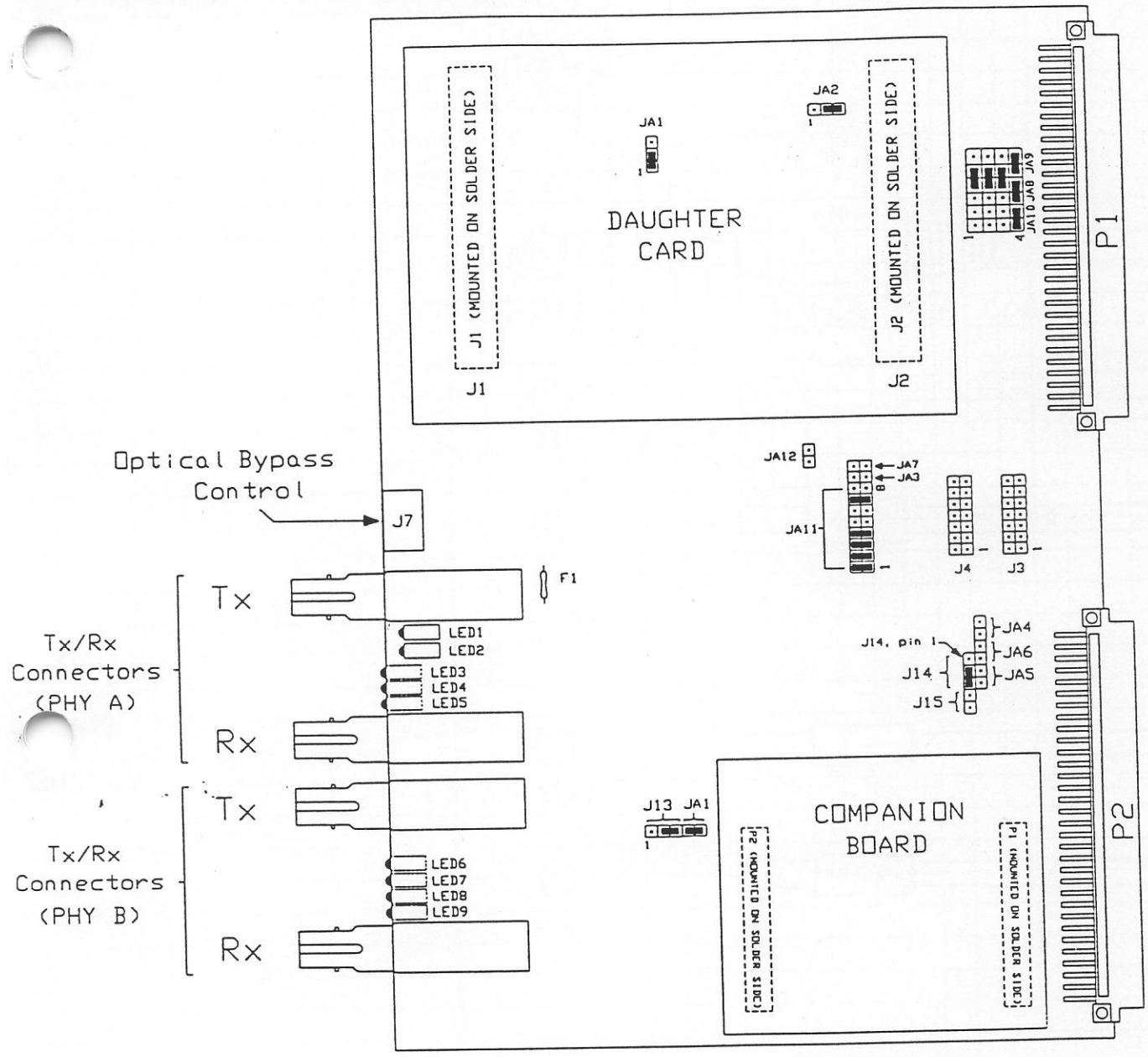


Figure 4-10. Heurikon HK68/V30 Rev. 2 Jumper Locations



JUMPER CONFIGURATION FOR HEURIKON CPU



JUMPER SETTINGS

= JUMPER INSTALLED.

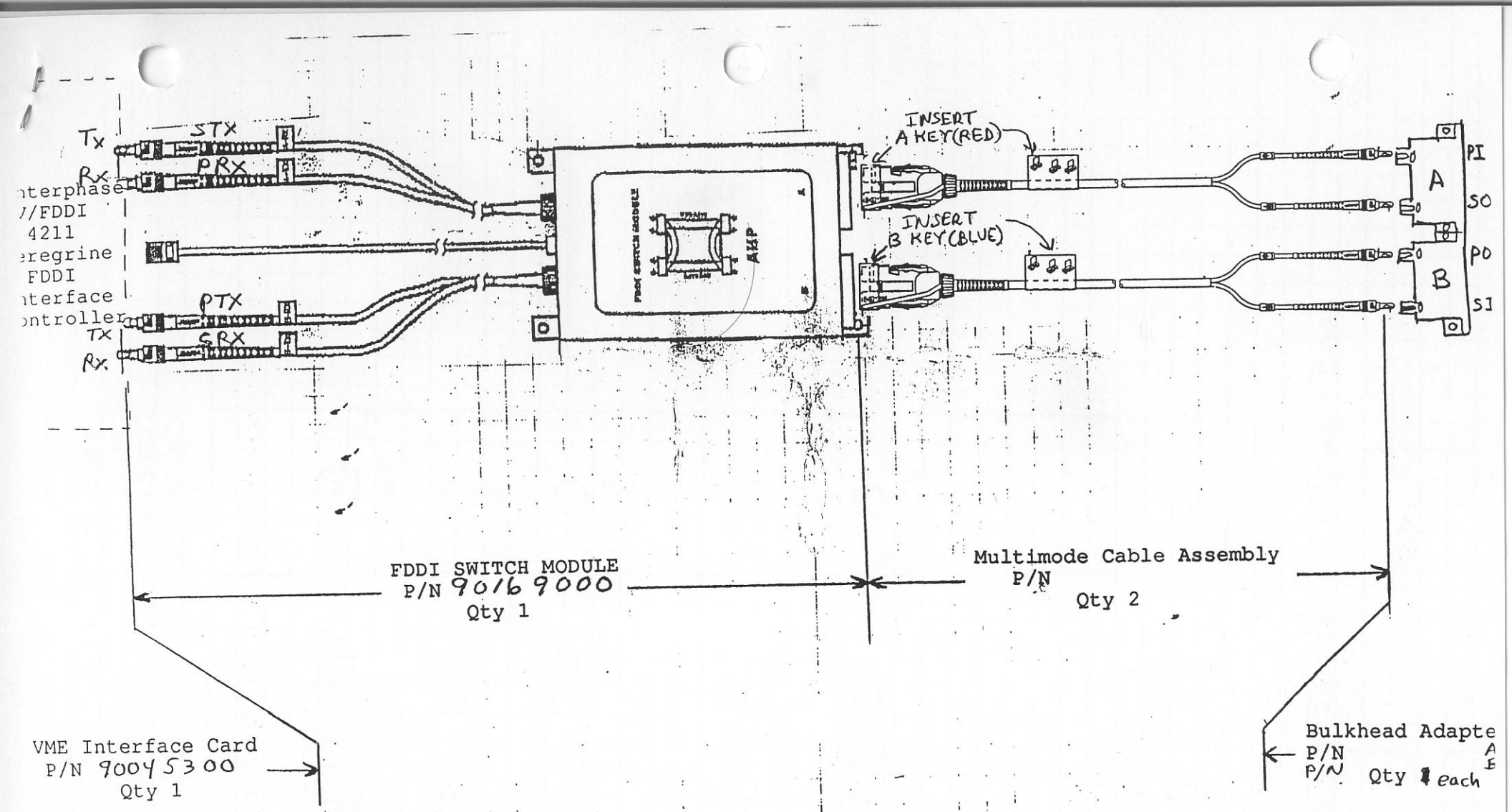
= NO JUMPER INSTALLED.

NOTES: [1] Versions of the 4211 designed for use as a single-attachment station only have one pair of optical connectors (labelled 'PHY A' above). For additional information on the PHY A / PHY B designation given above, please see 'Considerations for Cabling a Dual-Attachment Station' in this chapter.

[2] The jumper settings on your board may be different from those shown above.

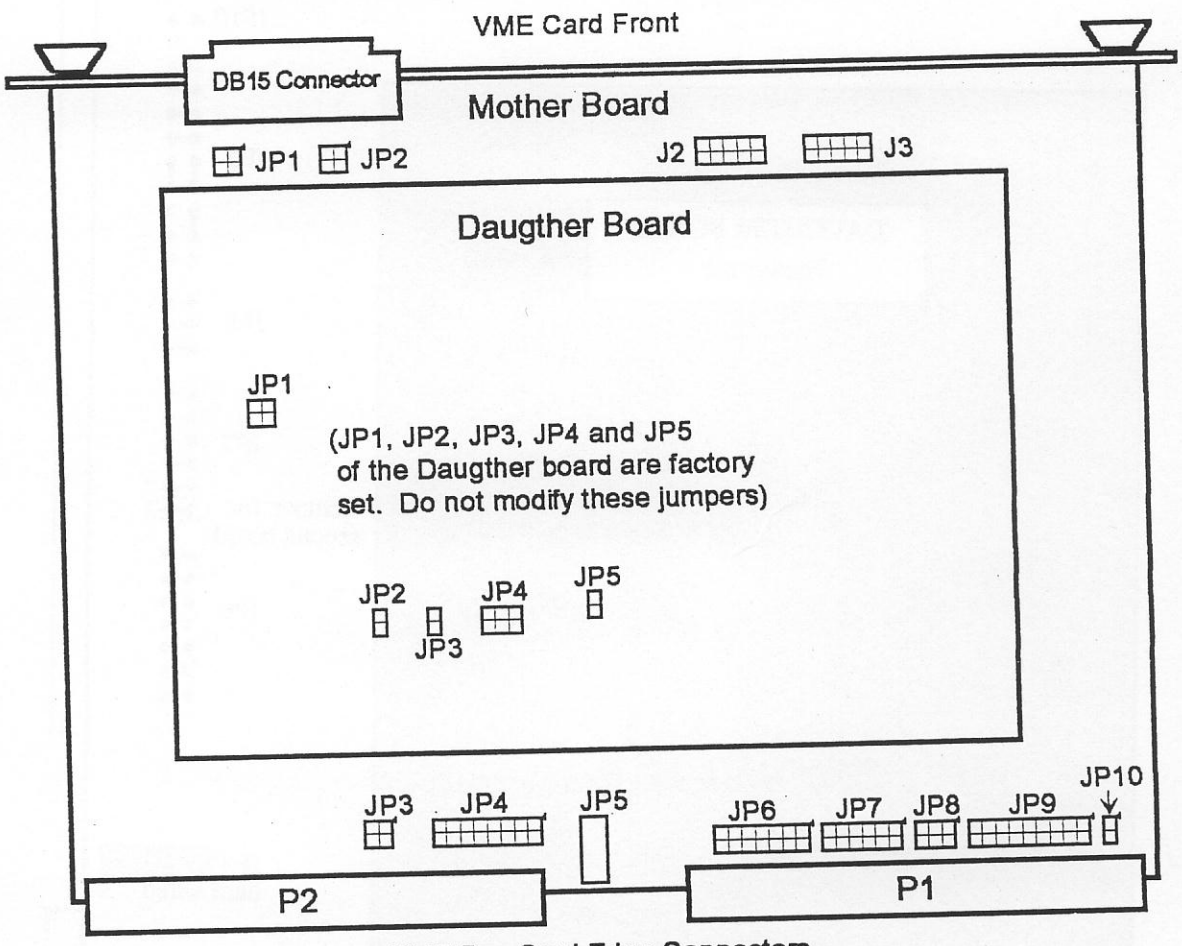
[3] A second fuse, F2, is located beneath the companion board.

Figure 2-1 . V/FDDI 4211 Peregrine Board Layout



FD-1 KIT ASSEMBLY DRAWING P/N 9007300

ETHERNET (EI-1) CMC-130 JUMPERS



Mother Board Jumper Configurations

JP1 VMEbus Burst Size

JP2 Ethernet Type

JP3 P2 Transceiver Power

JP4 VME Address (Upper Bits)

JP5 Factory set, do not change

JP6 Interupt Request

JP7 Device 0 / Device 1 / Device 2 — VME Address (Lower Bits)

JP8 Interupt Acknowledge

JP9 VMEbus Bus Request Level

JP10 XSlave

= Jumper Off = Jumper On

JUMPER CONFIGURATION FOR CMC ETHERNET CONTROLLER

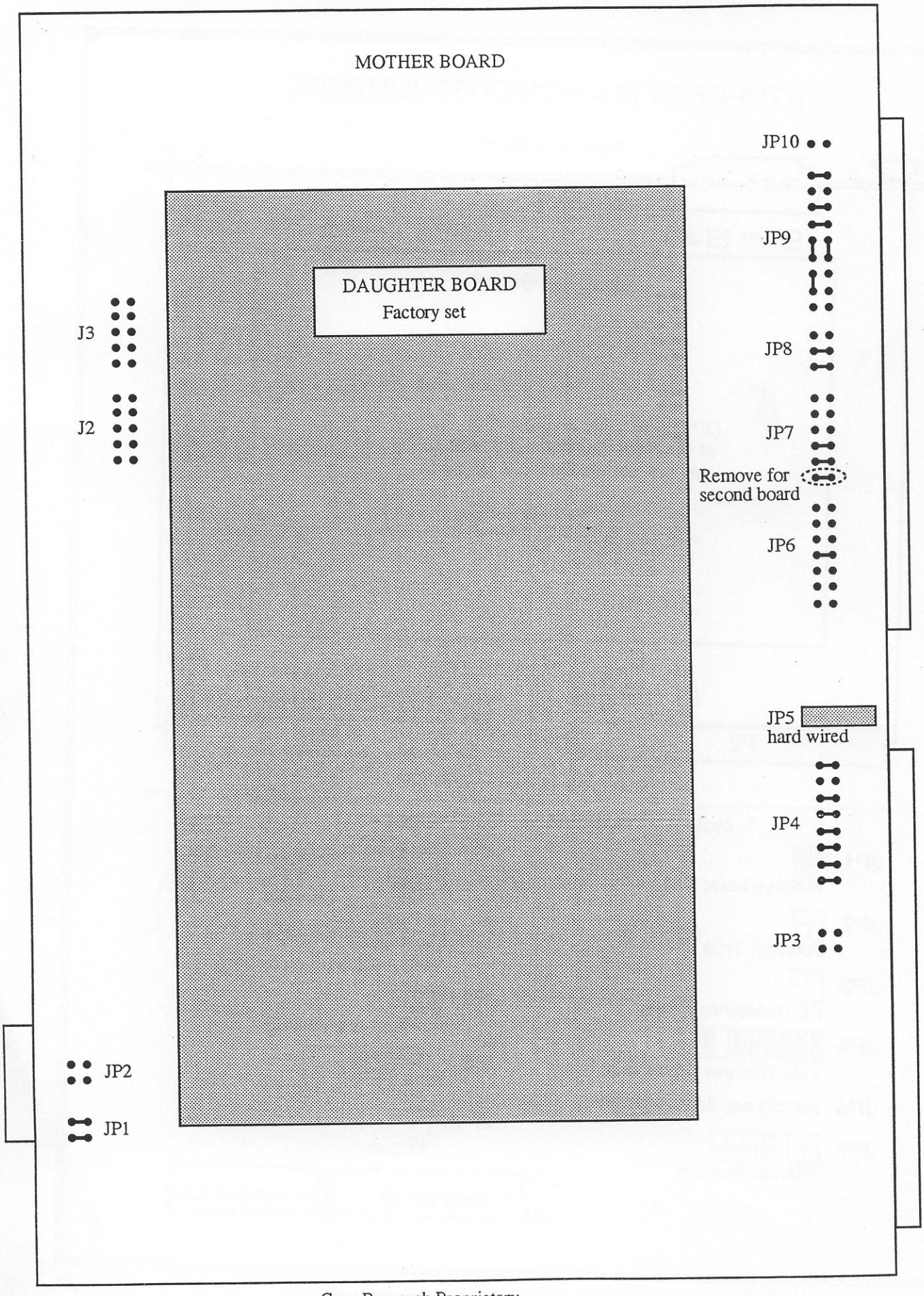


Table 3-1. Single-Ended SCSI Connector Pin Assignments

Pin	Assignment
2	-DB(0)
4	-DB(1)
6	-DB(2)
8	-DB(3)
10	-DB(4)
12	-DB(5)
14	-DB(6)
16	-DB(7)
18	-DB(P)
20	GROUND
22	GROUND
24	GROUND
26	TERMINATOR POWER[1]
28	GROUND
30	GROUND
32	-ATN
34	GROUND
36	-BSY
38	-ACK
40	-RST[2]
42	-MSG
44	-SEL
46	-C/D
48	-REQ
50	-I/O

1 The +5V drive supply is available on the SCSI connector as a terminator power option. The option is selected by a jumper on the PCB.

2 ANSI defines -RST as a bidirectional signal. On the Anaconda drive, -RST is input only.

3.5 Installing Anaconda Drives

Anaconda Models 2750 and 2800 are 5.25-inch, half-high drives that mount internal to the computer. Installing these drives consists of a few easy steps:

1. Set configuration options.
2. Mount the drive unit.
3. Complete the power and interface connections.

3.5.1 Configuration Options

The SCSI ID jumpers are at locations JP1, JP2, and JP3. The following table defines jumper setting for the SCSI ID. An X indicates a jumper installed

	SCSI ID							
Jumper	0	1	2	3	4	5	6	7
JP3					X	X	X	X
JP2			X	X			X	X
JP1		X		X		X		X

3.5.1.1 SCSI Parity

The SCSI parity jumper is located at JP5. To enable parity checking, install a jumper on JP5.

3.5.1.2 SCSI Termination Power

The SCSI terminator power jumper is located at JP7. To provide +5 VDC terminator power to the SCSI bus, install a jumper on JP7.

Note

JP6 is for manufacturing use only. Do not install a jumper on JP6.

ANACONDA 2750

TAPE DRIVE

4/21/92

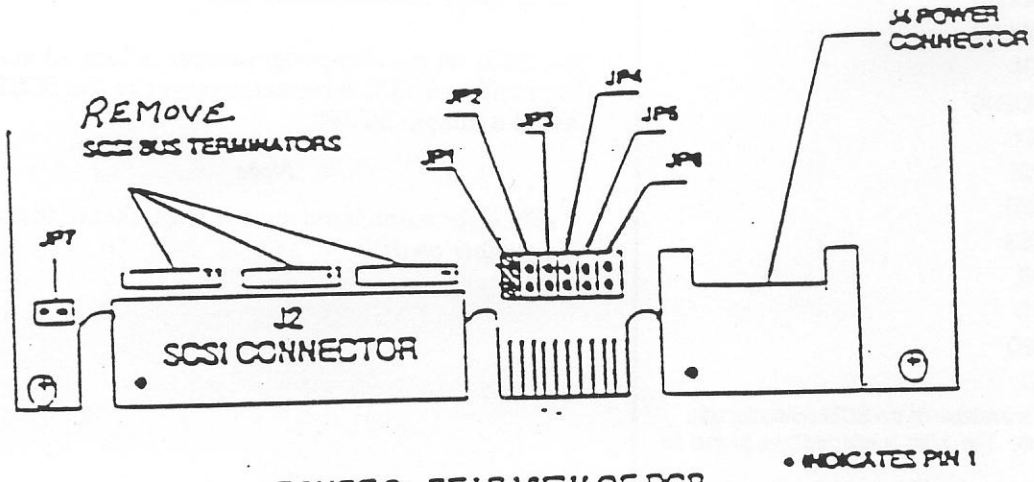


FIGURE 2 - REAR VIEW OF PCB

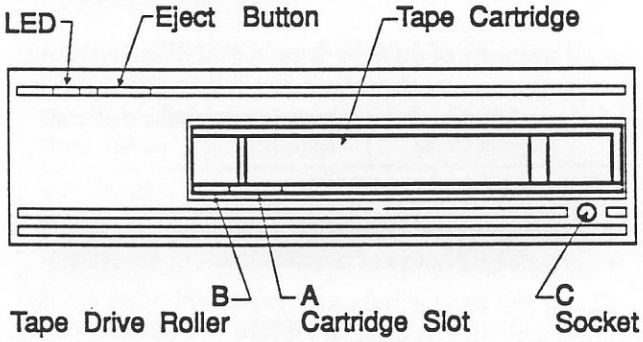
3.6.2.2 Unloading A Cartridge (Manual Operation)

If a power outage or malfunction of the autoload feature occurs while a cartridge is loaded, you can remove the cartridge by following this procedure. Use a standard 1/8-inch (3.2 mm) Allen wrench to remove the cartridge manually.

Caution

*Ensure the power to the Anaconda is turned **OFF**.*

1. Determine the position of the cartridge. See the following Illustration.



   In position 1, the failure occurred with the cartridge fully loaded. The cartridge slot A is over the roller B.

   In position 2, the failure occurred with the cartridge not fully loaded. The cartridge slot A is not over the roller B or it is recessed. Follow the instructions in Step 2, then the instructions in Step 1.

2. **Not Fully Loaded.** Insert the Allen wrench into socket C in the lower right corner of the Anaconda bezel. Push the wrench in and turn it clockwise until the cartridge reaches the fully-loaded position with slot A over roller B.

   Caution

   Do not force the wrench if you feel heavy resistance. Proceed to the loaded position instructions.

3. **Fully Loaded.** Fully insert the Allen wrench into socket C in the lower right corner of the Anaconda bezel. Push the wrench and turn it counter-clockwise until the cartridge reaches the normal unloaded position. It takes approximately 5 full turns to unload the cartridge.

   Caution

   Do not force the wrench if you feel heavy resistance.

Maintenance 7

7.1 Maintenance

Archive tape drives require minimum operator maintenance. Preventive maintenance consists of cleaning the head assembly. To ensure reliable tape drive performance, a regular cleaning schedule should be established and the following precautions should be observed.

- Maintain a clean, dust-free environment within the temperature and humidity limits listed in the specifications.
- Keep all liquids away from drive and tapes to prevent spills into the equipment.
- Exercise reasonable care when using and storing cartridges. Do not place cartridges on the computer, monitor, or any peripheral device. When not in use, store a cartridge in its protective box away from heat sources and electromagnetic fields.
- When a stored tape is moved to an environment with a greatly different temperature, allow the tape to slowly achieve ambient temperature before using it.
- A tape stored for extended periods should always be retensioned before reuse. Retension a new tape before attempting to record onto it.
- Do not open the cartridge access door or touch the tape; fingerprints can cause data to be misread.

7.2 Tape Drive Cleaning

A small amount of dust or debris can affect tape drive performance, therefore the following tape head cleaning schedule is recommended.

- Clean the head assembly
  - after an initial pass with a new tape cartridge
  - after eight hours of normal use
- Clean the sensor hole and tape cartridge cavity when any dirt or dust is visible

7.2.1 Cleaning Supplies

- Low pressure aerosol air. Cans of low pressure air are available commercially at many hardware and appliance stores.

  NOTE
  To avoid introducing contaminants into the tape drive, do not use shop air or air compressed in an oil lubricated compressor.

- Archive head cleaning fluid, Archive Part Number 14917-001 or reagent grade isopropyl alcohol.
- Archive head cleaning pads, Archive Part Number 14918-001. If head cleaning pads are not available, use lint free cotton swabs or any industry acceptable head cleaning swab, 6 inches or longer.

2.6 Data Cartridge Specifications

To enable backward compatibility in all models, Anaconda drives can recognize different types of data cartridges and can write and read various QIC standard tape formats.

The following table lists data cartridges qualified for use in the Anaconda drives, pluss the performance functions of each data cartridge with respect to the drive. The function column includes backward compatibility.

2.6.1 Model 2750 and 2800

Data Cartridge Specification	Data Cartridge	Archive Model (Length)	Anaconda Models 2750 and 2800						2800 Only
			QIC-24	QIC-120	QIC-150	QIC-525	QIC-1000	QIC-1350	QIC-2100C
BSR X3.127	DC300XLP	545 (450)	Read Only	–	–	–	–	–	–
X3B5/85-138	DC600A	560 (600)	Read Only	125 MB	–	–	–	–	–
A3B5/92-003	DC600XTD	660 (600)	Read Only	125 MB	150 MB	–	–	–	–
X3B5/92-003	DC6150	M2150 (620	Read Only	125 MB	150 MB	320 MB	–	–	–
X3B5/92-003	DC6250 21199-004	M2250 (1020)	Read Only	207 MB	249 MB	525 MB	–	–	–
	DC6320 25082\3-001	M2320 (620)	Read Only	125 MB	150 MB	320 MB	–	–	–
	DC6525 25083-101	M2525 (1020)	Read Only	207 MB	249 MB	525 MB	–	–	–
	DC9100 27665-001	M2100 (760)	–	–	–	–	1.0 GB	–	–
	DC9135 25613-00	M21350 (760)	–	–	–	–	–	1.3 GB	1.6 GB
	DC9210	M22100 (925)	–	–	–	–	–	–	2.1 GB1