

PROBLEMS

4 CIRCUIT POWER CONNECTOR

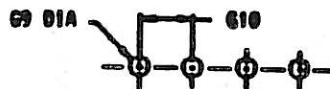
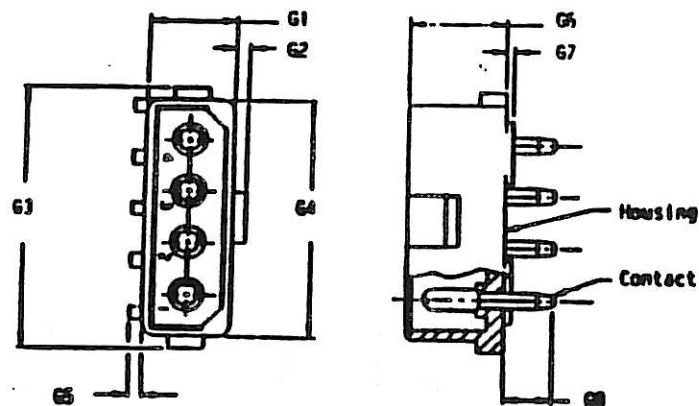
- ✓ ESDI DOES NOT SPECIFY CRITICAL INTERNAL DIMENSIONS OF THE 4 CIRCUIT POWER CONNECTOR.
- ✓ LACK OF A DEFINED INDUSTRY STANDARD HAS CREATED PLUG COMPATIBILITY PROBLEMS AMONG COMPONENTS OF THE DISK DRIVE POWER SUPPLY DISTRIBUTION SYSTEM, WHICH INCLUDES:
 - POWER SUPPLY OUTPUT CABLE
 - POWER DISTRIBUTION HARNESS
 - DISK DRIVE POWER INPUT CONNECTOR

FILE:PWRPRBLM

Foils presented by Jim McGrath (Moler) February 19, 1991

X 379.2/91-23

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Recommended Layout for
1.57 (.062 inch) thick P.C. BOARD

NOTES:

- (1) Tolerances $\pm 0.30\text{mm}$ (0.015 inch) noncumulative, unless specified otherwise.
- (2) Dimensions listed with asterisks (*) are shown for reference only.

| DIMENSIONS | MILLIMETERS | INCHES |
|------------|-----------------|------------------|
| G1 | 0.30 | .030 |
| G2* | 1.27 | .050 |
| G3* | 25.4 ± 0.25 | $1.000 \pm .010$ |
| G4 | 23.24 | .915 |
| G5* | 1.27 | .050 |
| G6 | 9.53 | .375 |
| G7 | 0.76 ± 0.13 | $.030 \pm .005$ |
| G8 | 4.57/3.81 | .180/.150 |
| G9* | 1.78 ± 0.08 | $.070 \pm .003$ |
| G10* | 5.08 ± 0.13 | $.200 \pm .005$ |

FIGURE 13: J3/P3 POWER CONNECTOR

TABLE 2: J3/P3 CONNECTOR PIN ASSIGNMENTS

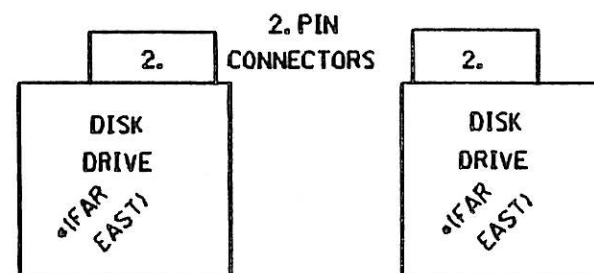
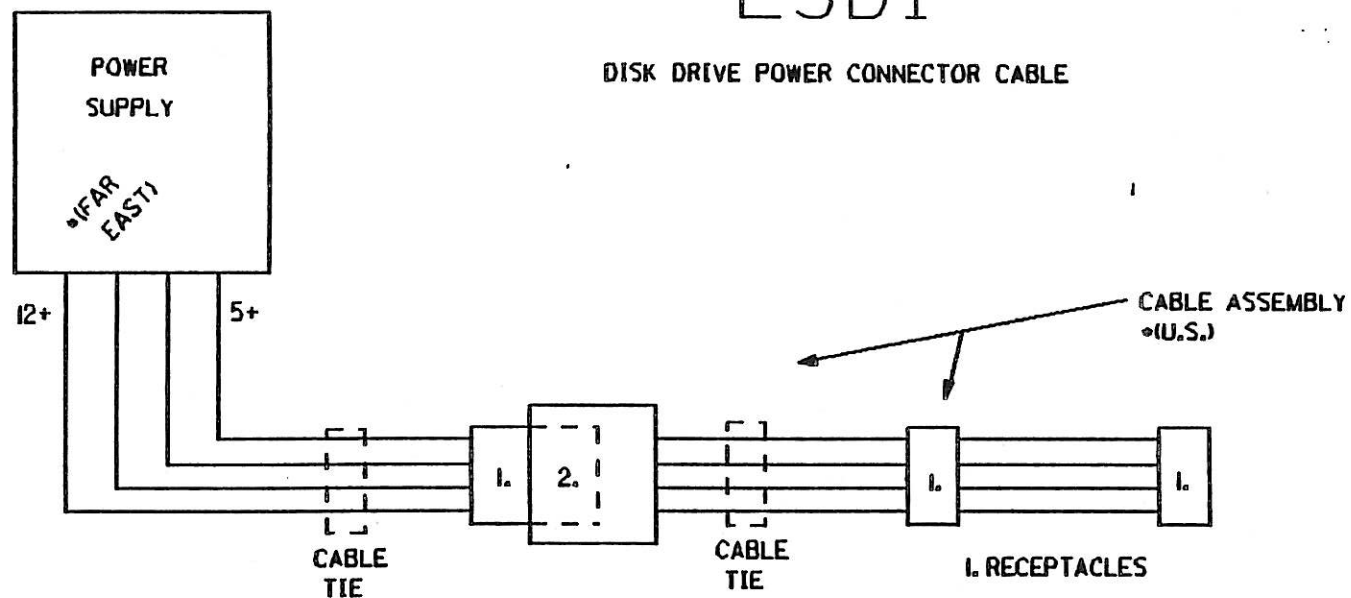
| J3 Connector Pin | Voltage |
|------------------|-------------|
| 1 | +12V DC +5% |
| 2 | 12V RETURN |
| 3 | 5V RETURN |
| 4 | + 5V DC +5% |

Internal Small Device Interface

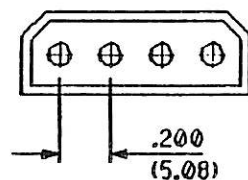


ESDI

DISK DRIVE POWER CONNECTOR CABLE



".084" SYSTEM



PROBLEMS

4 CIRCUIT POWER CONNECTOR

- ✓ WE HAVE ASSUMED THIS IS AN .084 PIN SYSTEM
- ✓ SEVERAL CONNECTOR MANUFACTURERS HAVE TARGETED .084 PIN DIAMETER SYSTEMS WHILE OTHERS HAVE TARGETED .0825 AND .081 PIN DIAMETER
- ✓ ONE MANUFACTURER HAS TARGETED A 2mm PIN (.079)
- ✓ BASED ON THE ABOVE, INDUSTRY PIN DIAMETERS COULD RANGE FROM .077 (.079 +/- .002) TO .086 (.084 +/- .002)

PROBLEMS

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THIS LARGE RANGE OF PIN DIAMETERS CAUSES:
INTERMITENT CONTACT

OR

EXTREMELY HIGH PLUGGING FORCE

✓ SUGGESTION: STANDARDIZE PIN DIAMETER AT
.0825 +/- .001

BECAUSE IT WILL MINIMIZE PROBLEMS WITH BACKWARD
COMPATIBILITY DURING AND AFTER STANDARDIZATION.

✓ SUGGESTION: SPECIFY MIN-MAX INSERTION AND
WITHDRAWAL FORCES FOR THE RECEPTACLE.

PROBLEMS

4 CIRCUIT POWER CONNECTOR

- ✓ ANOTHER PROBLEM INVOLVES REVERSE PLUGGING
DUE TO :
 - LACK OF DEFINED INTERNAL DIMENSIONS
AND TOLERANCES OF THE CONNECTOR HOUSING
 - USE OF SOFT NYLONS FOR BOTH PLUG
AND RECEPTACLE HOUSINGS
- ✓ THE ABOVE COMBINED WITH ANTICIPATED HIGH
PLUGGING FORCE (DUE TO PIN DIA.) ALLOWS
THE POLARIZATION FEATURE TO BE DEFEATED.