SHEET INDEX

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OPTION INDEX

APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION
Z	1	305	B1
Y	1	305	B2
X	1	305	B3
W	1	305	B4

DWG ISS	CD ISS	DATE ISSD	DRN	APP
1	1 APPX –	7-20-92		
2S	1 APPX 1S	10-20-92		
3M	1 APPX 2M	4-12-93		
4M	1 APPX 3M	9-13-93		
5M	1 APPX 4M	11-10-93		
6M	1 APPX 5M	12-10-96		

SUPPORTING INFORMATION

SYSTEM USED ON	DESIGN CONTROL	CATEGORY	NO.
5ESS	IH	EQUIPMENT DRAWING	J5D003FH SD-5D140-01 SD-5D144-01 SD-5D144-02 SD-5D118-03 SD-5D119-02 SD-5D160-01
3B21	IH	EQUIPMENT DRAWING	J3T060A

SHEET INDEX NOTES

1. ONLY THE LATEST ISSUE, OR ISSUES IF CONCURRENT, ARE SHOWN IN THE INDEX.
2. FOR REISSUES, A CHANGED OR NEW SHEET IS ASSIGNED THE SAME ISSUE NUMBER AS SHEET 1.
3. THE ISSUE NUMBER OF SHEET 1 IS RECOGNIZED AS THE ISSUE NUMBER OF THE WHOLE DRAWING.

BT13

5ESS ® SWITCHING EQUIPMENT

6 FAN BI-DIRECTIONAL UNIT CIRCUIT

DWG SIZE	ISSUE
C2	6M

AT&T	SD-5D168-02	SHEET A1 17

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DESIGNATION MNEMONICS INDEX

MNEMONIC	FS/SYM	DEFINITION
FLED(0-1)	1	CABINET LED RETURN
FLEDR	1	CABINET LED RETURN
RSTR	1	REMOTE RESET RETURN
RSTFAN	1	REMOTE RESET REPEAT RETURN
RSTFANS	1	REMOTE RESET REPEAT
SCANR	1	SCAN POINT OUTPUT RETURN
3BSCAN0	1	SCAN POINT OUTPUT
3BRST1	1	REMOTE RESET
-48(A-G)	1	NEGATIVE 48 VOLT SUPPLY
48RTN(A-G)	1	NEGATIVE 48 VOLT RETURN
-F(A-G)	1	FAN RETURN
TACH(A-G)	1	TACH SIGNAL
CTL(A-G)	1	CONTROL
TH(1-8)	1	THERMAL COUPLE +
RET	1	THERMO COUPLE RETURN
TCC(0-2)	1	PROGRAM LEADS
FP(A-B)	1	FAN PRESENT

6 FAN BI-DIRECTIONAL

DWG SIZE C2 | ISSUE 2B

Lucent Technologies | SD-5D168-02 | SHEET A2

APARATUS INDEX

DESIG	LOCATION FS	APP FIG.	EQPT
CIRCUIT PACK			
FTC	1E4	1	
	2E4		
	3E4		
	4E4		

DESIG	LOCATION FS	APP FIG.	EQPT
TERMINAL STRIP			
TS0	1B8	1	
	2B8		
	3B8		
	4B8		

CONNECTOR			
C1	1C7	1	
	2C7		
	3C5		
C2	1C6	1	
	2C6		
	3C4		
C3	1C5	1	
	2C5		
	3C4		
C4	1C4	1	
	2C4		
	4C5		
C5	1C3	1	
	2C3		
	4C4		
C6	1C2	1	
	2C2		
	4C3		

THERMISTORS			
TH1	1G5	1	
	2G5		
	3G5		
	4G5		
TH2	1G5	1	
	2G5		
	3G5		
	4G5		
TH3	1G5	1	
	2G5		
	3G5		
	4G5		
TH4	1G6	1	
	2G6		
	3G6		
	4G6		
TH5	1G6	1	
	2G6		
	3G6		
	4G6		
TH6	1G6	1	
	2G6		
	3G6		
	4G6		
TH7	1G6	1	
	2G6		
	3G6		
	4G6		
TH8	1G6	1	
	2G6		
	3G6		
	4G6		

FAN			
A	1C7	1	
	2C7		
	3C5		
B	1C6	1	
	2C6		
	3C4		
C	1C5	1	
	2C5		
	3C4		
E	1C4	1	
	2C4		
	4C5		
F	1C3	1	
	2C3		
	4C4		
G	1C2	1	
	2C2		
	4C3		

LEAD INDEX

DESIG	LOCATION FS	CAD
CABINET LEDS		
FLED1	1E8	1C1
	2E8	
	3E8	
	4E8	
FLED0	1E8	1B1
	2E8	
	3E8	
	4E8	
FLEDR	1E8	1B1
	2E8	
	3E8	
	4E8	

FAN LEDS		
-FA	1C6	1D7
	2C6	3D2
	3C6	4D2
	4C6	5D4
CTLA	1C7	1E7
	2C7	3D2
	3C7	4D2
	4C7	5D4
TACHA	1C7	1D7
	2C7	3D2
	3C7	4D2
	4C7	5D4
-FB	1C6	1E7
	2C6	3C2
	3C6	4C2
	4C6	5C4
CTLB	1C6	1E7
	2C6	3C2
	3C6	4C2
	4C6	5C4
TACHB	1C6	1D7
	2C6	3C2
	3C6	4C2
	4C6	5D4
-FC	1C5	1E7
	2C5	3B2
	3C5	4B2
	4C5	5B4
CTLC	1C5	1F7
	2C5	3B2
	3C5	4B2
	4C5	5B4
TACHC	1C5	1E7
	2C5	3B2
	3C5	4B2
	4C5	5C4
-FE	1C4	2B2
	2C4	3D5
	3C4	4D5
	4C4	6D4
CTLE	1C4	2C2
	2C4	3E5
	3C4	4E5
	4C4	6D4
TACHE	1C4	2B2
	2C4	3D5
	3C4	4D5
	4C4	6D4
-FF	1C3	2C2
	2C3	3C5
	3C3	4C5
	4C3	6C3
CTLF	1C3	2C2
	2C3	3C5
	3C3	4C5
	4C3	6C4
TACHF	1C3	2B2
	2C3	3C5
	3C3	4C5
	4C3	6D4

DESIG	LOCATION FS	CAD
FAN LEDS CONT.		
-FG	1C2	2B2
	2C2	3B5
	3C2	4B5
	4C2	6B4
CTLG	1C2	2C2
	2C2	3B5
	3C2	4B5
	4C2	6B4
TACHG	1C2	2B2
	2C2	3B5
	3C2	4B5
	4C2	6B4
TH1	1G5	1D3
	2G5	
	3G5	
	4G5	
TH2	1G5	1E3
	2G5	
	3G5	
	4G5	
TH3	1G5	1D3
	2G5	
	3G5	
	4G5	
TH4	1G6	1E3
	2G6	
	3G6	
	4G6	
TH5	1G6	1D3
	2G6	
	3G6	
	4G6	
TH6	1G6	1F3
	2G6	
	3G6	
	4G6	
TH7	1G6	1E3
	2G6	
	3G6	
	4G6	
TH8	1G6	1F3
	2G6	
	3G6	
	4G6	
RET	1G7	1F3
	2G7	
	3G7	
	4G7	
TCC0	1G6	1E3
	2G6	
	3G6	
	4G6	
TCC1	1G6	1F3
	2G6	
	3G6	
	4G6	
TCC2	1G6	1E3
	2G6	
	3G6	
	4G6	

DESIG	LOCATION FS	CAD
FUSE/FILTER PANEL		
-48A	1A7	1E7
	2A7	2C0
	3A7	3D2
	4A7	5D2
		5D3
-48B	1A6	3C2
	2A6	4C2
	3A6	4C5
	4A6	5C3
-48C	1A5	3B2
	2A5	4B2
	3A5	4B5
	4A5	5C3
-48E	1A4	2C2
	2A4	3D5
	3A4	6D3
	4A4	
-48F	1A3	3D5
	2A3	6C3
	3A3	
	4A3	
-48G	1A2	3B5
	2A2	6B3
	3A2	
	4A2	
48RTNA	1A7	1F7
	2A7	2D0
	3A7	3D2
	4A7	4D2
		5D3
48RTNB	1A6	3C2
	2A6	4C2
	3A6	4C5
	4A6	5C2
48RTNC	1A5	3B2
	2A5	4B2
	3A5	4B5
	4A5	5C3
48RTNE	1A4	2D2
	2A4	3D5
	3A4	6D3
	4A4	
48RTNF	1A3	3D5
	2A3	6C3
	3A3	
	4A3	
48RTNG	1A2	3B5
	2A2	6B3
	3A2	
	4A2	

DESIG	LOCATION FS	CAD
SUCCEEDING FAN UNIT		
3BSCAN0	1G3	1B7
	2G3	1D1
	3G3	
	4G3	
	1G4	
	2G4	
	3G4	
	4G4	
RSTFAN	1G4	1C7
	2G4	1E1
	3G4	
	4G4	
	1G4	
	2G4	
	3G4	
	4G4	
RSTFANS	1G4	1B7
	2G4	1D1
	3G4	
	4G4	
	1G5	
	2G5	
	3G5	
	4G5	
SCANR	1G3	1B7
	2G3	1D1
	3G3	
	4G3	
	1G4	
	2G4	
	3G4	
	4G4	

IOP 0 OR PRECEDING FAN UNIT		
3BSCAN0	1G2	1B3
	2G2	
	3G2	
	4G2	
3BRST1	1G2	1C3
	2G2	
	3G2	
	4G2	
RSTR	1G2	1B3
	2G2	
	3G2	
	4G2	
SCANR	1G2	1B3
	2G2	
	3G2	
	4G2	

IOP 1 OR NC		
3BSCAN0	1G2	1C5
	2G2	
	3G2	
	4G2	
3BRST1	1G3	1B5
	2G3	
	3G3	
	4G3	
RSTR	1G3	1C5
	2G3	
	3G3	
	4G3	
SCANR	1G3	1B5
	2G3	
	3G3	
	4G3	

6 FAN BI-DIRECTIONAL

DWG SIZE C2 | ISSUE 5M | SHEET A3

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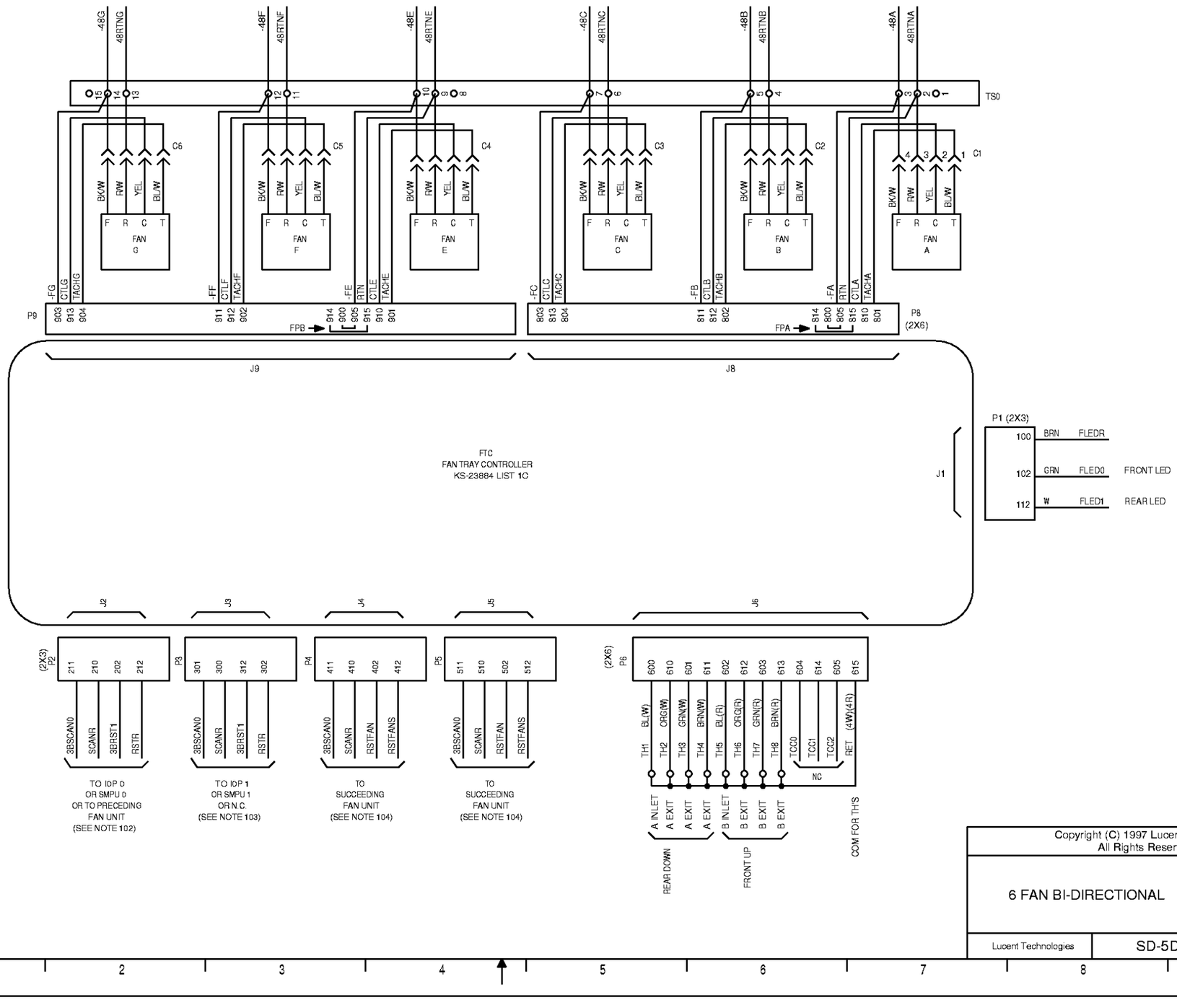
P/O FS 1 (OPTION Z)

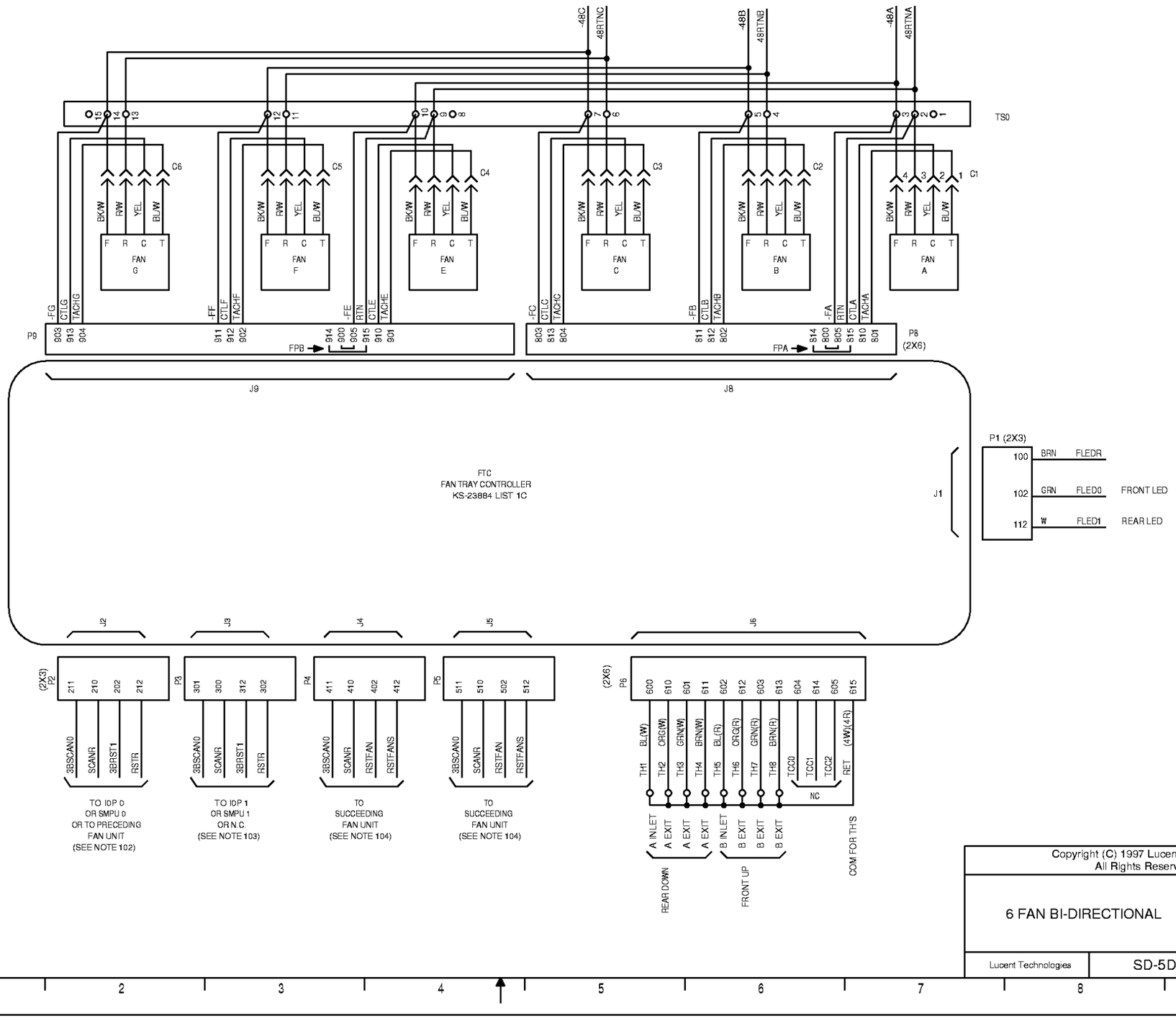


6 FAN BI-DIRECTIONAL

DWG SIZE	ISSUE
C2	6M

Lucent Technologies	SD-5D168-02	SHEET
		B1

P/O FS 1 (OPTION Y)

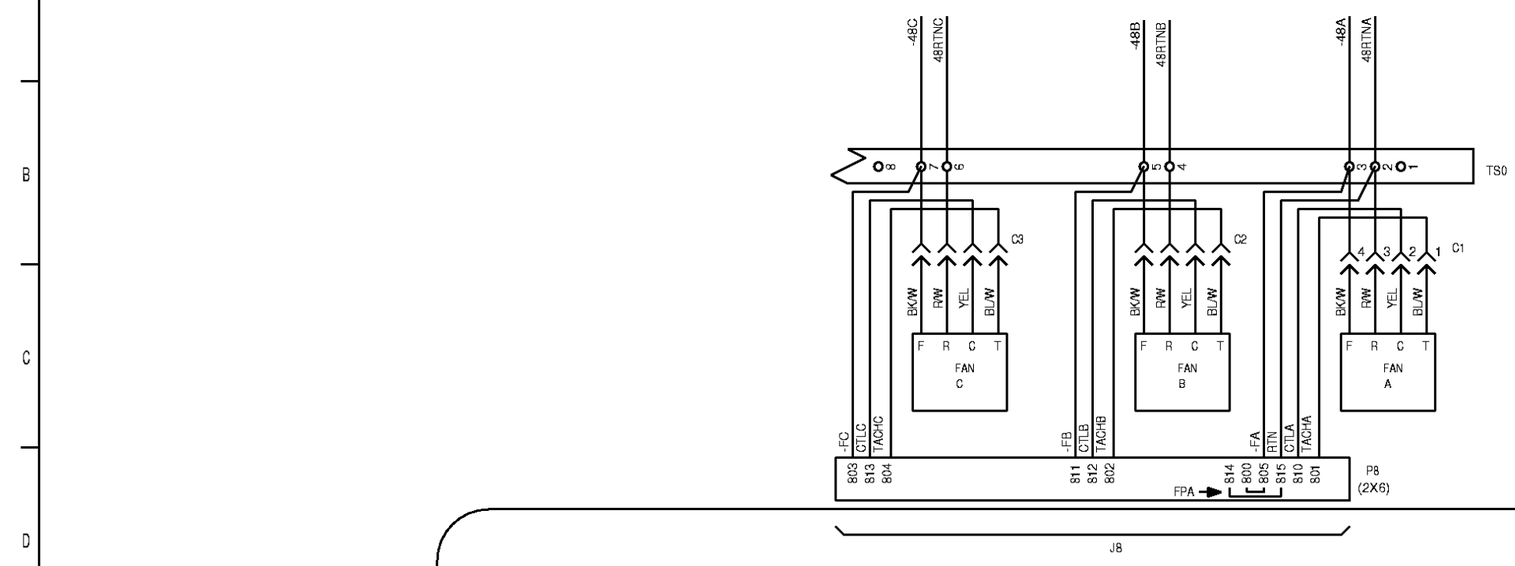


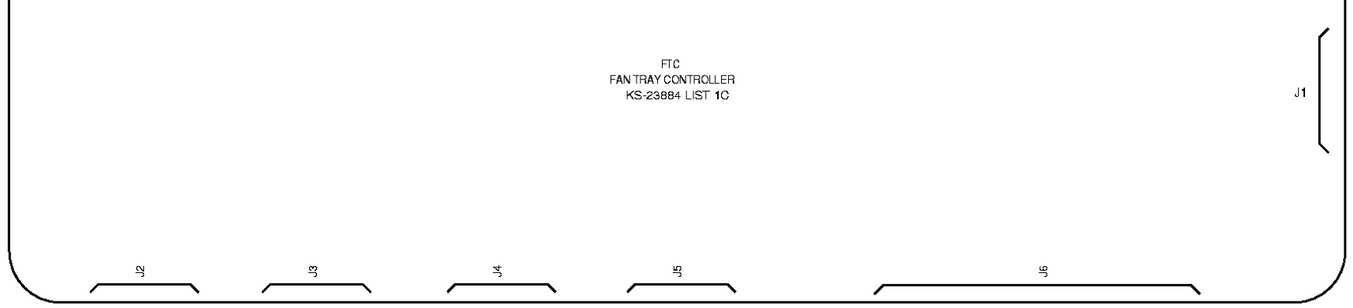
6 FAN BI-DIRECTIONAL

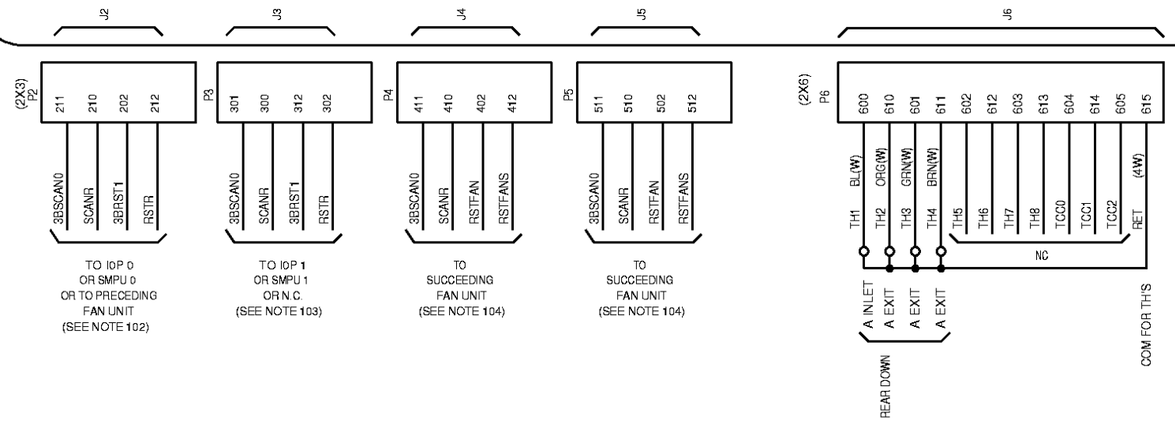
DWG SIZE	ISSUE
C2	6M

Lucent Technologies	SD-5D168-02	SHEET B2

P/O FS 1 (OPTION X)





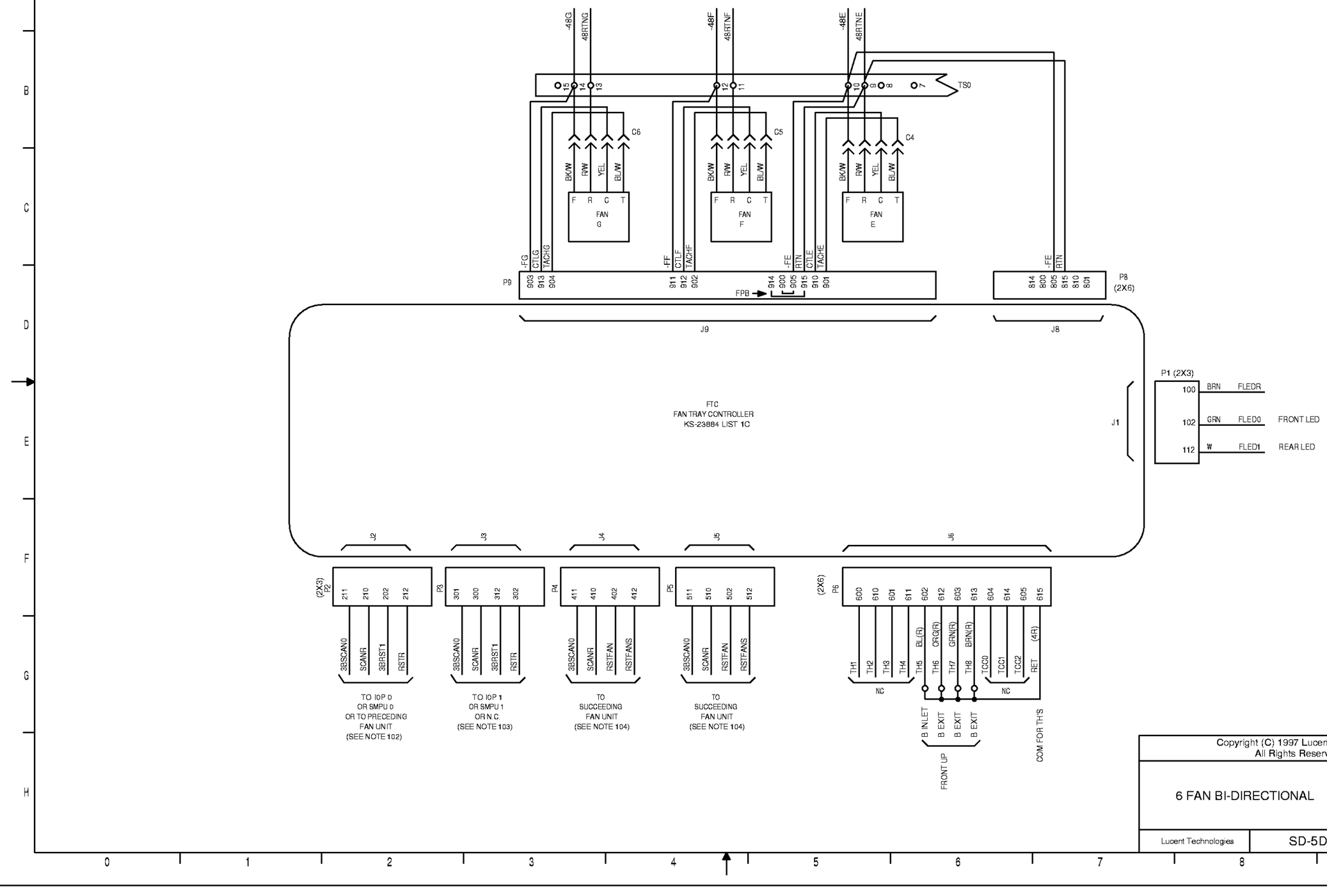


6 FAN BI-DIRECTIONAL

DWG SIZE	ISSUE
C2	6M

Lucent Technologies	SD-5D168-02	SHEET B3

P/O FS 1 (OPTION W)



6 FAN BI-DIRECTIONAL

DWG SIZE	ISSUE
C2	6M

Lucent Technologies | SD-5D168-02 | SHEET B4

APP FIG. 1

CIRCUIT PACK

DESIG	LOC	CODE
FTC	1F4	KS23884L1C CC#407463009 MOUNTING BRACKET INCLUDED

CONNECTOR

DESIG	LOC	CODE
C1	1D5	AMP (SEE NOTE 304)
C2	1D6	AMP (SEE NOTE 304)
C3	1D7	AMP (SEE NOTE 304)
C4	1D2	AMP (SEE NOTE 304)
C5	1D3	AMP (SEE NOTE 304)
C6	1D4	AMP (SEE NOTE 304)

FAN

DESIG	LOC	CODE
A	1C5	MODEL
B	1C6	KS23912L2 CC#406611186
C	1C7	
E	1C2	
F	1C3	
G	1C4	

TERMINAL STRIP

DESIG	LOC	CODE
TS0	1B8,2B8,3B6,4B6	EBY 15-84-2E1F-B1A

THERMISTORS

DESIG	LOC	CODE
TH1 2 3 4 5 6 7 TH8	1G5	RL 0503-2890-95-MS CC# 407003474 (KEYSTONE CARBON) (PHONE (814)781-1591)

6 FAN BI-DIRECTIONAL

DWG SIZE C2 | ISSUE 6M

Lucent Technologies | SD-5D168-02 | SHEET C1

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
70 B	2	-48V	CIRCUIT (OLD FFU)
WP91768L108	3	-48V	CIRCUIT (NEW FFU)

BATTERY SYMBOL	VOLTAGE RANGE
-48V	-42.75V TO -52.5

102. MASTER UNIT: TO IOP 0 TO MCTU 0 IF USED IN THE SMC CABINET. , OR LTP CABINET.
SLAVE UNIT: FROM (J4/5) PREVIOUS FAN UNIT.

103. MASTER UNIT: TO IOP 1 OR TO MCTU 1 IF USED IN THE SMC CABINET, OR LTP CABINET.
SLAVE UNIT: NO CONNECT.

104. MASTER UNIT: TO (J2) OF THE SUCCEEDING UNIT NO CONNECT OTHERWISE.
SLAVE UNIT: TO (J2) OF THE SUCCEEDING UNIT NO CONNECT OTHERWISE.

105. THE CONNECTIONS SPECIFIED IN NOTES 102-104 APPLY TO 6 FAN UNITS INTERCONNECTIONS ONLY. IN CASE 6 FAN UNITS (SD-5D081-01) ARE INTERMIXED WITH OTHER FAN UNITS, SEE THE SWITCHING MODULE APPLICATION SCHEMATIC (SD-5D012-02) FOR INTERCONNECTION INSTRUCTIONS.

106. THE CONTROL ALGORITHMS AND CONFIGURATION:

THE TEMPERATURE CONTROL CODE DEFINED BY TCC0, TCC1 AND TCC2 SIGNALS SHALL BE SO DESIGNED TO SELECT ANY OF THE FOLLOWING CONTROL OPTIONS.

TCC0	TCC1	CONFIGURATION
OPEN	OPEN	FAN GROUP (1,2,3) USE THRM. GROUP A FAN GROUP (4,5,6) USE THRM. GROUP B
OPEN	CLOSE	FANS 1 THRU 6 USE THRM. GROUP A
CLOSE	OPEN	FANS 1 & 3 USE THRM. GROUP A FANS 4 & 6 USE THRM. GROUP B
CLOSE	CLOSE	FUTURE USE
		FANS 1 & 3, 4 & 6 USE THERMAL GROUP A. FIREWARE 4.3 AND HIGHER

TWO TEMPERATURE/FAN SPEED CONTROL ALGORITHMS SHALL BE PROVIDED BY THE CONTROLLER. SELECTION OF ONE OF THE ALGORITHMS MAY BE DONE THROUGH TCC2 AS SHOWN IN THE TABLE BELOW.

TCC2	CONTROL ALGORITHM
OPEN	1500RPM < OPERATING RPM < 3400 FOR 0 C < MAX{DELTA-T} < 10 WHERE: MAX{DELTA-T}=MAX{(INLET TEMP-25); (EXIT TEMP-40)}
CLOSE	PID CONTROL RPM TO MEET: DELTA-T = {26-0.2*INLET TEMP} WHERE: DELTA-T = [MAX{EXIT TEMPS -} - INLET TEMP]

107. THERMISTOR AND TEMPERATURE MEASUREMENTS:

A MAXIMUM OF 8 THERMISTORS MAY BE CONNECTED TO THE CONTROLLER; TH1 - TH8. THERMISTOR LOCATIONS ARE IDENTIFIED AS INLET OR EXIT, DEPENDING ON THEIR LOCATION UPSTREAM OR DOWNSTREAM OF THE CIRCUIT PACKS. INLET SIGNIFIES AMBIENT AIR TEMPERATURE TO THE CABINET. EXIT SIGNIFIES EXIT AIR TEMPERATURE FROM THE CIRCUIT PACK. THE FOLLOWING DENOTE THE GROUPINGS:

THERMISTOR GROUP	INLET THERMISTOR	EXIT THERMISTORS
A REAR FANS (DOWN)	TH1	TH2,TH3,TH4
B FRONT FANS (UP)	TH5	TH6,TH7,TH8

6 FAN BI-DIRECTIONAL

DWG SIZE	ISSUE
C2	6M

Lucent Technologies	SD-5D168-02	SHEET D1

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS.
CAPACITANCE VALUES ARE IN MICROFARADS,
VALUES PRECEDED BY THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.

302.

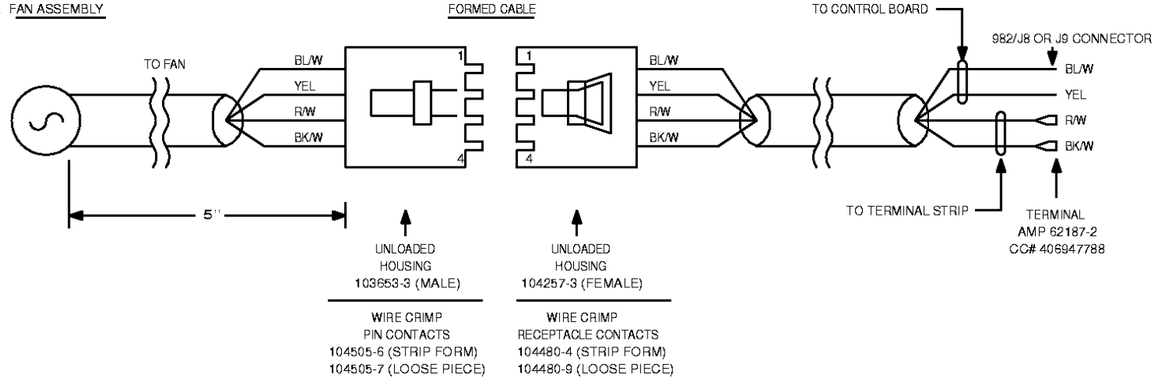
FEATURE OR OPTION	PROVIDE		
	APP FIG	APP OR WRG	QUANTITY
BASIC 6 FAN UNIT 1 FAN PER FUSE	1	Z	1
BASIC 6 FAN UNIT 2 FANS PER FUSE	1	Y	1
3 FANS DOWN 1 FAN PER FUSE	1	X	1
3 FANS UP 1 FAN PER FUSE	1	W	1

303.

RECORD OF FIGURES, WIRING AND APPARATUS CHANGES						
CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
				STD	A&M	MD

INFORMATION NOTES(CONT):

304. FAN ASSEMBLY



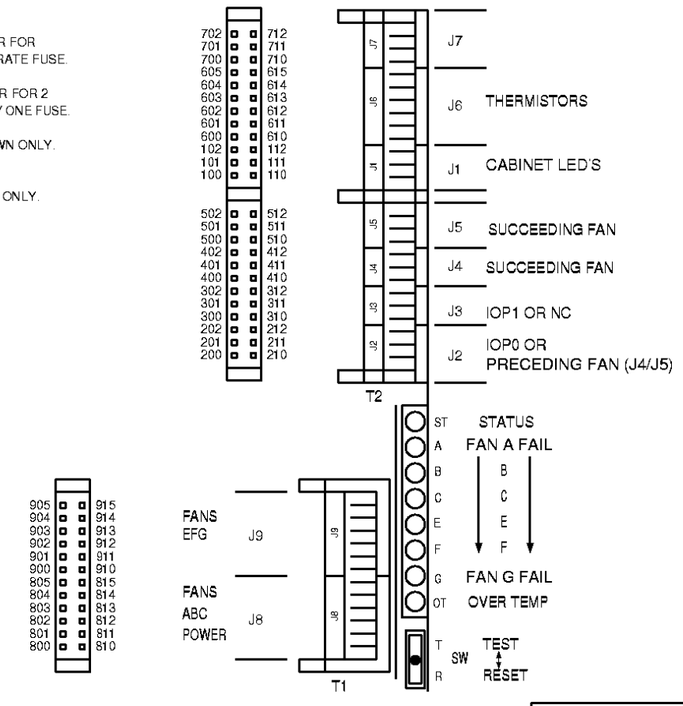
305. FAN OPTIONS

THE OPTIONS ARE LISTED BELOW WITH A BRIEF DESCRIPTION OF EACH FAN UNIT AS IT IS WIRED AND EQUIPPED.

- Z OPTION IS A BASIC 6 FAN UNIT WITH THE POWER FOR EACH OF THE 6 FANS BEING SUPPLIED BY A SEPARATE FUSE.
- Y OPTION IS A 6 BASIC FAN UNIT WITH THE POWER FOR 2 FANS, ONE UP AND ONE DOWN, BEING SUPPLIED BY ONE FUSE.
- X OPTION IS A 3 FAN UNIT WITH AIR BLOWING DOWN ONLY.
- W OPTION IS A 3 FAN UNIT WITH AIR BLOWING UP ONLY.

306. FAN CASE MOUNTING BRACKET CC# 846614766.

307. CONTROLLER LAYOUT
KS23884,L1C
(STAMPED ON BACK)



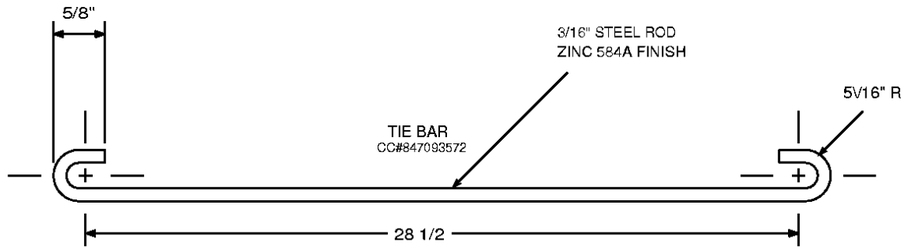
6 FAN BI-DIRECTIONAL

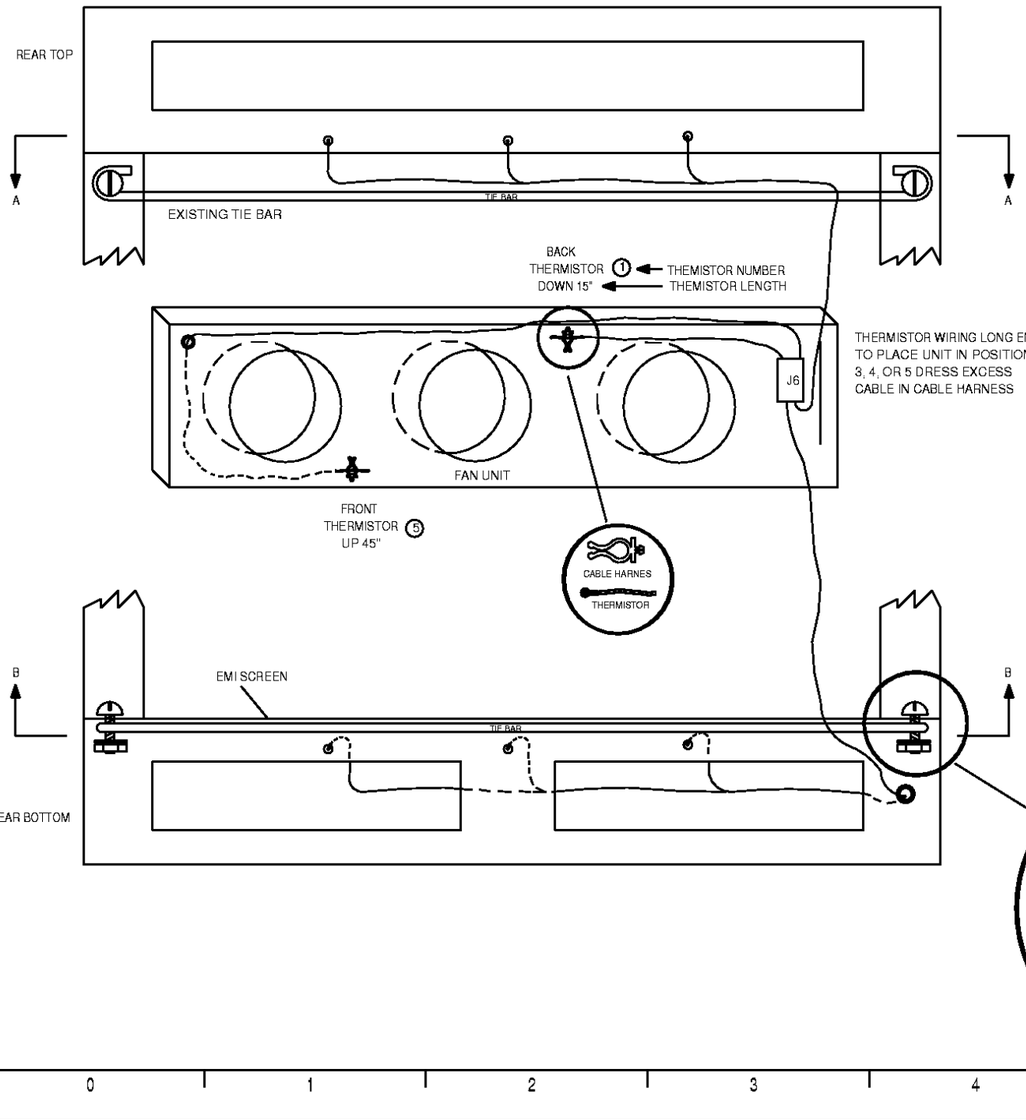
DWG SIZE	ISSUE
C2	6M

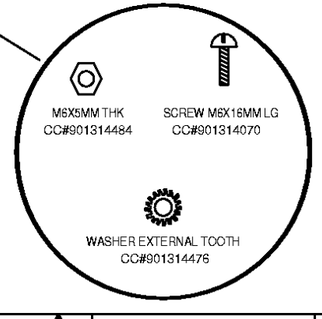
Lucent Technologies	SD-5D168-02	SHEET D2

INFORMATION NOTES (CONT)

308. THERMISTOR INSTALLATION ON ED5D184 CABINETS

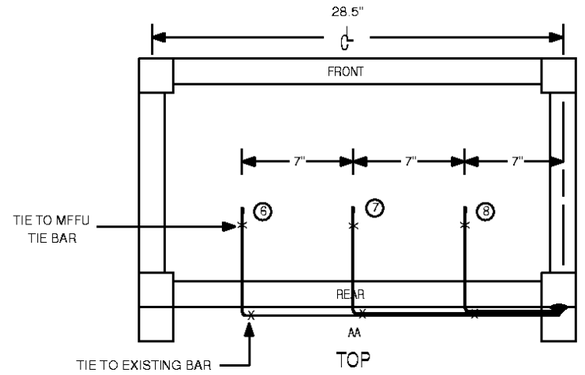


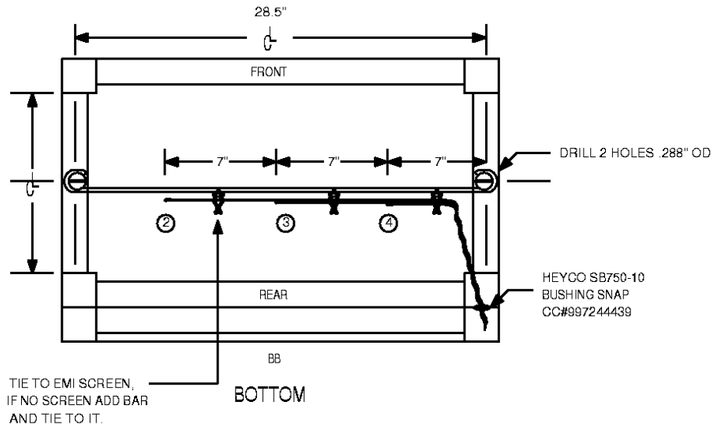




INFORMATION NOTES (CONT)

308. THERMISTOR INSTALLATION ON ED5D184 CABINETS (CONT)

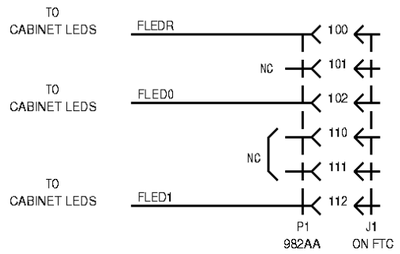




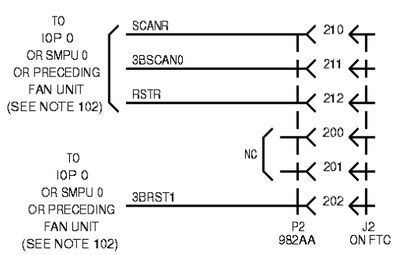
309. THERMISTOR INSTALLATION ON 5E-2000 CABINETS (ED-5D741) SAME AS IN ED5D184 CABINET.

6 FAN BI-DIRECTIONAL	DWG SIZE C2	ISSUE 6M
Lucent Technologies	SD-5D168-02	SHEET D3

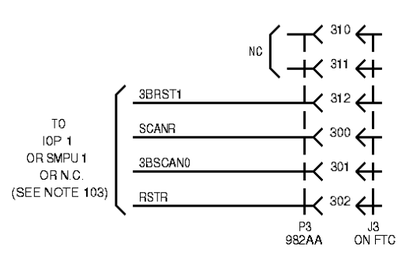
CAD 1



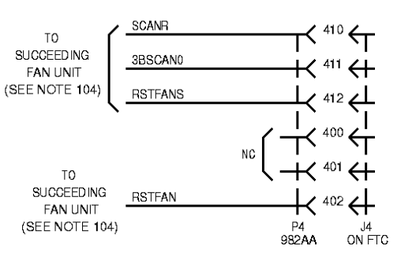
CAD 2



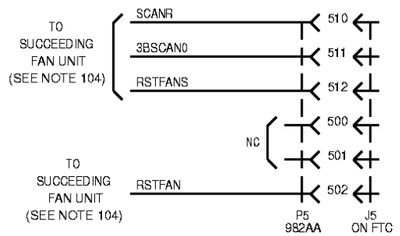
CAD 3



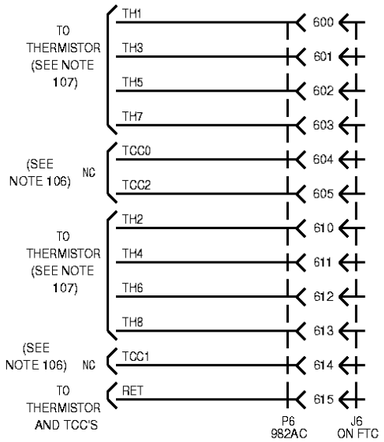
CAD 4



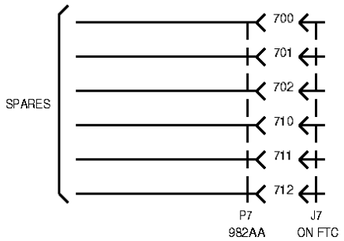
CAD 5



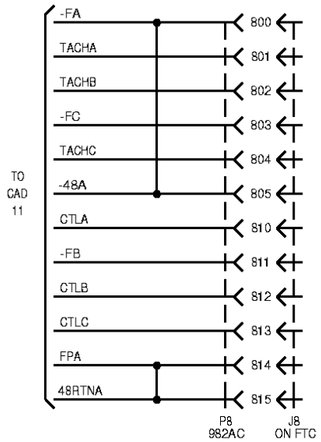
CAD 6



CAD 7



CAD 8

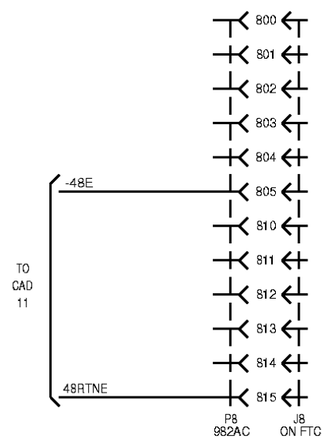


6 FAN BI-DIRECTIONAL

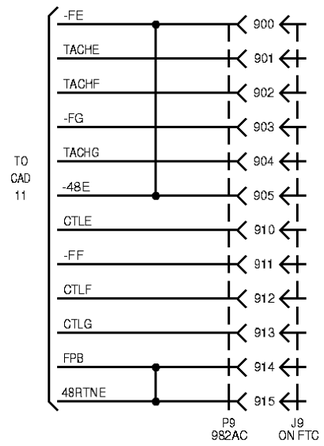
DWG SIZE	ISSUE
C2	5M

Lucent Technologies	SD-5D168-02	SHEET
		G1

CAD 9



CAD 10



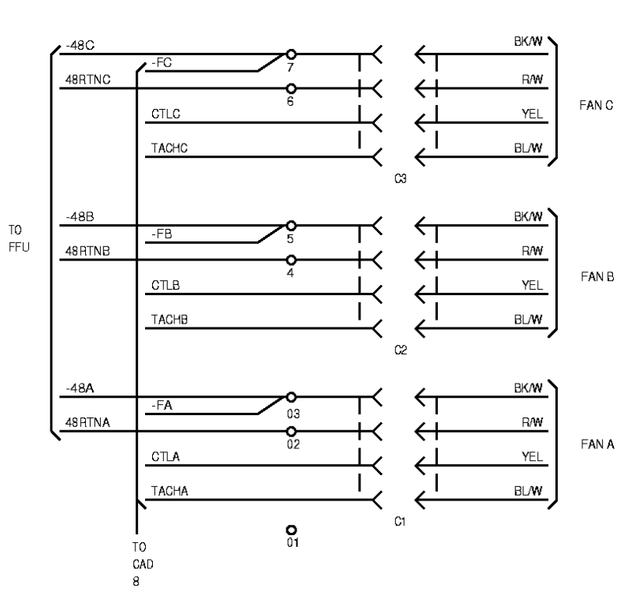
6 FAN BI-DIRECTIONAL

DWG SIZE	ISSUE
C2	5M

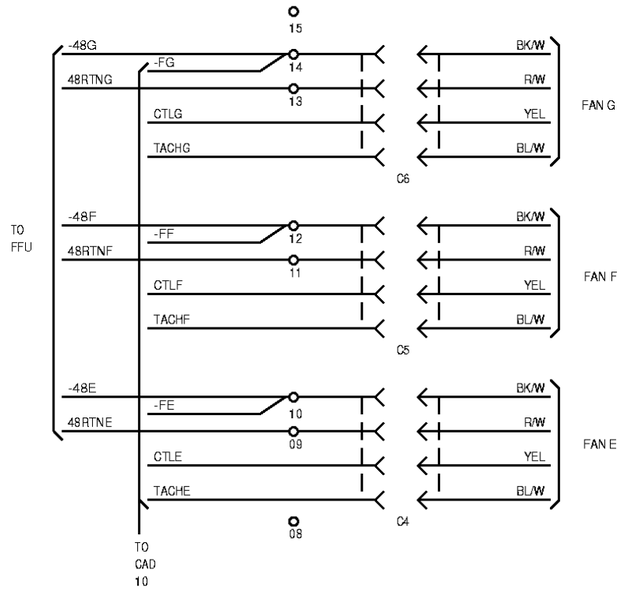
Lucent Technologies	SD-5D168-02	SHEET
		G2

P/O CAD 11 OPTION Z

FAN POWER CONNECTION



TERMINAL STRIP
(TS0)
EBY15-84-2E1F-B1A



TERMINAL STRIP
(TS0)
EBY15-84-2E1F-B1A

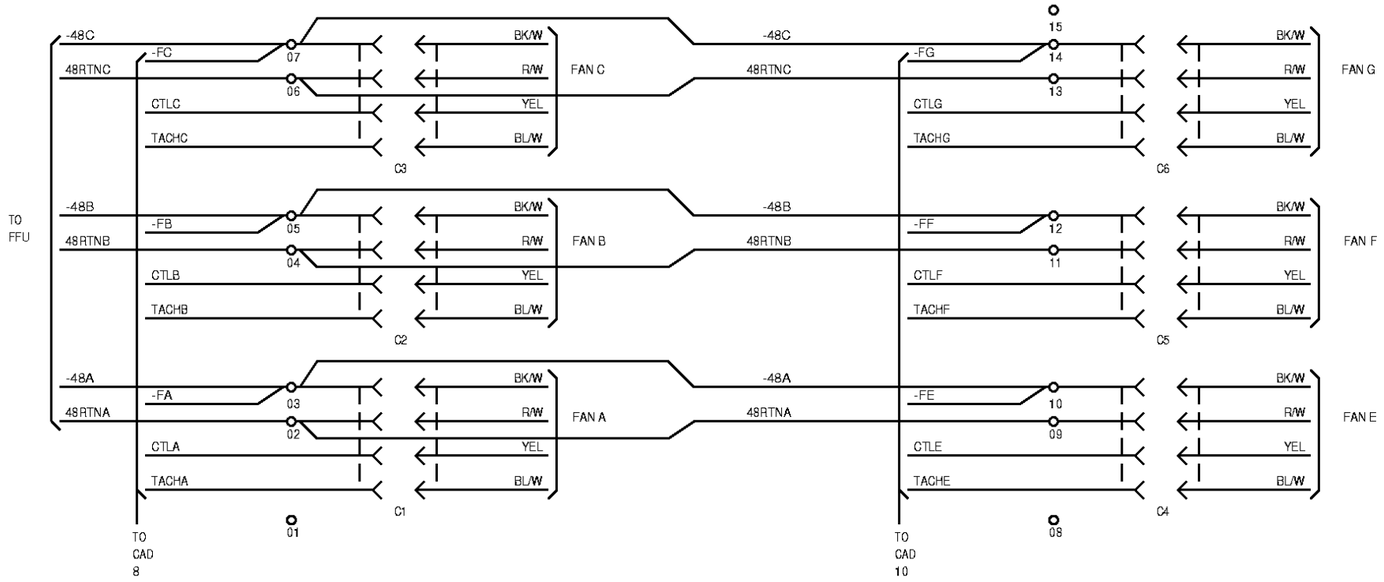
6 FAN BI-DIRECTIONAL

DWG SIZE	ISSUE
C2	5M

Lucent Technologies	SD-5D168-02	SHEET
		G3

P/O CAD 11 OPTION Y

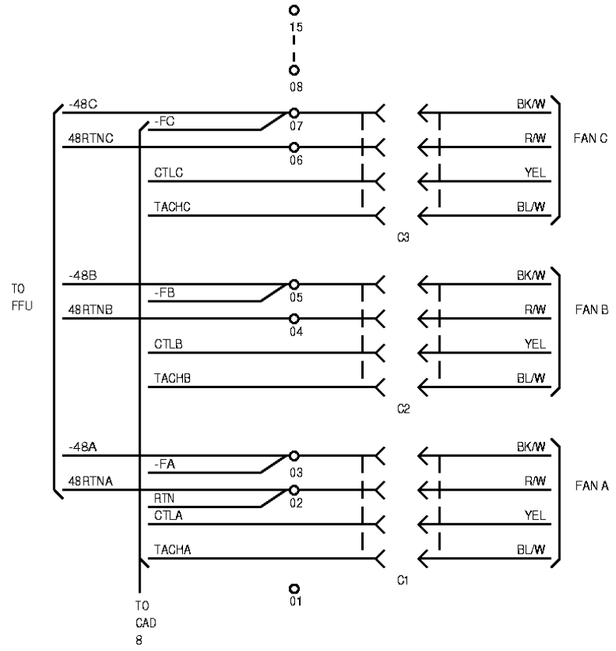
FAN POWER CONNECTION



6 FAN BI-DIRECTIONAL	DWG SIZE C2	ISSUE 5M
Lucent Technologies	SD-5D168-02	SHEET G4

P/O CAD 11 OPTION X

FAN POWER CONNECTION



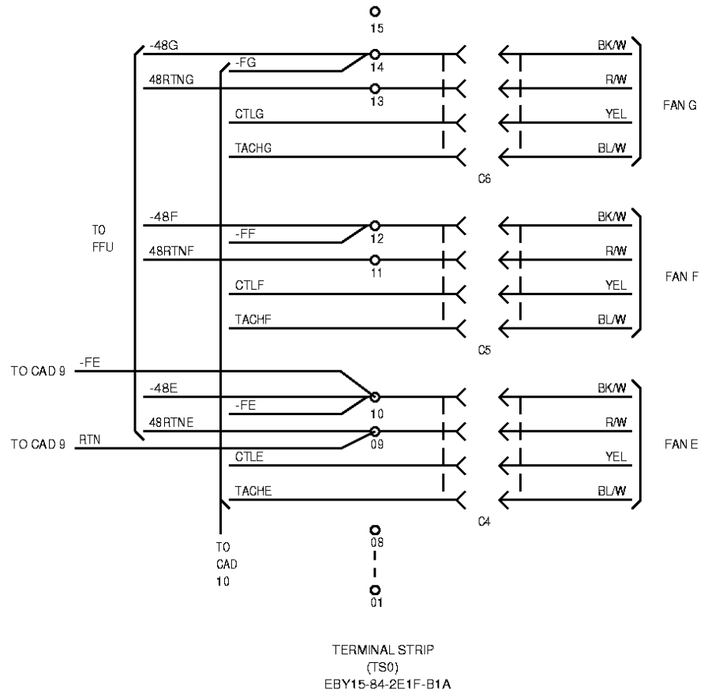
TERMINAL STRIP
{TS0}
EBY15-84-2E1F-B1A

6 FAN BI-DIRECTIONAL

DWG SIZE	ISSUE
C2	5M

Lucent Technologies	SD-5D168-02	SHEET
		G5

P/O CAD 11 OPTION W



TERMINAL STRIP
(TS0)
EBY15-84-2E1F-B1A

6 FAN BI-DIRECTIONAL

DWG SIZE	ISSUE
C2	5M

Lucent Technologies	SD-5D168-02	SHEET
		G6