LE8-0 line printer engineering drawings

digital equipment corporation · maynard. massachusetts

digital EQUIPMENT CORPORATION

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

THIS IS PRINT SET ☐☐☐☐

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-LE8-0		
ACCESSORY LIST	A-AL-LE8-0-4		
PARTS LIST	A-PL-LE8-0-0		
ENGINEERING SPEC.	A-SP-LE8-0-1		
LINE PRINTER CONTROL	E-CS-M841-0-1		
CABLE	D-IA-7006964-0-0		
ACCEPTANCE PROC	A-SP-LE8-0-3		

MFG. SET

TEST PROCEDURE	A-SP-LE8-0-2
ACCEPTANCE PROCEDURE	A-SP-LE8-0-3

UNIT VARIATIONS

VAR	TITLE	PRINT SET LE8Ø-1
LE8-FA	80 COLUMN, 64 CHAR, 60HZ	X
LE8-FB	80 COLUMN, 64 CHAR, 50HZ	X
LE8-HA	80 COLUMN, 96 CHAR, 60HZ	X
LE8-HB	80 COLUMN, 96 CHAR, 50HZ	X
LE8-JA	132 COLUMN, 64 CHAR, 60HZ	X
LE8-JB	132 COLUMN, 64 CHAR, 50HZ	X
LE8-KA	132 COLUMN, 96 CHAR, 60HZ	X
LE8-KB	132 COLUMN, 96 CHAR, 50HZ	X
LE8-VA	80/132 COL. 64 CHAR SCIENTIFIC DRUM	X
LE8-VE	80/132 COL, 64 CHAR EDP DRUM	X
LE8-WA	80/132 COL, 96 CHAR SCIENTIFIC DRUM	X
LE8-WE	80/132 COL, 96 CHAR EDP DRUM	X

REVISIONS		
REV	B	
CHG. NO.	LE8-4 ORIGINATED	
DATE	3-74	

C.C. 16-13251 0062-1-1972

USED ON OPTION/MODEL		DRN.	DATE	TITLE
PDP8E		L Narhi	3-4-74	
PDP8F		CHK'D. L. Gilbert	DATE 3-4-74	LINE PRINTER & CONTROL
PDP8M		PROJ ENG. L. NARHI	DATE 2/6/74	
		PROD.	DATE	SIZE B / CODE DD / NUMBER LE8-0 / REV B
		FIELD SERV. W Hoskins	DATE 3-4-74	DIST
SHEET 1	OF 2			

DRB 106

ELECTRICAL

CUSTOMER PRINT SET				SET F.G.	FIND NO.	AWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X					1	A-SP-LE8-0-1	A	3	ENGINEERING SPEC	
				X		A-SP-LE8-0-2	A	3	TEST PROCEDURE	
X				X		A-SP-LE8-0-3	A	3	ACCEPTANCE PROCEDURE	
X						A-AL-LE8-0-4	A	1	ACCESSORY LIST	
X					2	E-CS-M841-0-1	#	2	LINE PRINTER CONTROL	M841
						B-MH-M841-0-6		1	MODULE HISTORY	

MECHANICAL

CUSTOMER PRINT SET				MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X					1	A-PL-KE8-0-0	A	1	PARTS LIST	
X					3	D-IA-7006964-0-0	#	1	CABLE, DATA PRODUCTS TO M841	
					4	A-ML-LP01-0		1	LINE PRINTER (80 COLUMN)	LP01
					5	E-UA-LP02-0-0		1	LINE PRINTER (132 COLUMN)	LP02
					6	B-DD-LP05-0			LINE PRINTER (80/132 COLUMN)	LP05

CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
LINE PRINTER & CONTROL	SHEET 2 OF 2	B	DD	LE8-0	B

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY Larry Marks	CHECKED [illegible]	SECTION
DATE 3-4-74	DATE 3-4-74	1
ENG Larry Marks	PROD	ISSUED SECT.
DATE 3-4-74	DATE	!

LEGEND

D DOCUMENT
DN DOCUMENT CHANGE NOTICE
PA PAPER TAPE ASCII
PB PAPER TAPE BINARY
PM PAPER TAPE READ-IN-MODE

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION LE8-FA,FB,HA,HB	LE8-JA,JB,KA,KB	LE8-VA,VE,WA,WE					KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	B-DD-LE8-0	LE8 CUSTOMER PRINT SET	1	1	1						
2	DEC-8E-HMM-D	MAINTENANCE MANUAL VOLUME III	1	1	1						
3	LIBKIT-8E-LE8	SOFTWARE KIT	1	1	1						
4	A-AL-LPØ1-0-4	LPØ1 ACCESSORIES	1	-	-						
5	A-AL-LPØ2-0-1	LPØ2 ACCESSORIES	-	1	-						
6	A-AL-LP05-0	LPØ5 ACCESSORIES	-	-	1						
7	M841	LINE PRINTER CONTROL	*1	*1	*1						
8	7006964	CABLE	*1	*1	*1						
*	INCLUDED ONLY WHEN NOT INSTALLED IN A COMPUTER										

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
LE8 ACCESSORY LIST	A-PL-LE8-0-0	A	AL	LE8-Ø-4	A	LE8 00004
	SHEET 1 OF 1	DIST.				

DEC 16-(325)-1075-N172 DRA 121

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY Larry Marlin	CHECKED R Gallant	SECTION 1
DATE 3-4-74	DATE 3-4-74	
ENG Larry Marlin	PROD	ISSUED SECT. 1
DATE 3-4-74	DATE	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION											
			LE8-FA	LE8-FB	LE8-HA	LE8-HB	LE8-JA	LE8-JB	LE8-KA	LE8-KB	LE8-VA	LE8-VE	LE8-WA	LE8-WE
1	M841	LINE PRINTER CONTROL	1	1	1	1	1	1	1	1	1	1	1	1
2	7006964	CABLE	1	1	1	1	1	1	1	1	1	1	1	1
3	3009766	LPØ1-FA	1	-	-	-	-	-	-	-	-	-	-	-
4	3009767	LPØ1-FB	-	1	-	-	-	-	-	-	-	-	-	-
5	3009768	LPØ1-HA	-	-	1	-	-	-	-	-	-	-	-	-
6	3009769	LPØ1-HB	-	-	-	1	-	-	-	-	-	-	-	-
7	3009770	LPØ2-JA	-	-	-	-	1	-	-	-	-	-	-	-
8	3009771	LPØ2-JB	-	-	-	-	-	1	-	-	-	-	-	-
9	3009772	LPØ2-KA	-	-	-	-	-	-	1	-	-	-	-	-
10	3009773	LPØ2-KB	-	-	-	-	-	-	-	1	-	-	-	-
11	3011631-01	LPØ5-VA	-	-	-	-	-	-	-	-	1	-	-	-
12	3011631-02	LPØ5-VE	-	-	-	-	-	-	-	-	-	1	-	-
13	3011631-05	LPØ5-WA	-	-	-	-	-	-	-	-	-	-	1	-
14	3011631-06	LPØ5-WE	-	-	-	-	-	-	-	-	-	-	-	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
LE8 PARTS LIST	SHEET 1 OF 1	A	PL	LE8-0-0	A	LE8-00004
		DIST.				

DEC FORM DRA 110 DEC 16-(325)-1031-N870

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 8-17-70

TITLE LE8-XX Line Printer Inteface to the PDP-8/E

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	LE8 - 00004	NARHI	2/74	L. Narhi	3/4/74

ENG	APPD	SIZE	CODE	NUMBER	REV
Larry Narhi	Larry Narhi	A	SP	LE8-0-1	A

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE LE8-XX LINE PRINTER INTERFACE TO THE PDP-8/E

1. OVERALL DESCRIPTION

The LE8 is an interface to several models of the Data Products Line Printer to the PDP-8/E computer. The logic is designed entirely of TTL integrated circuits for low coast and high speed.

2. GENERAL SPECIFICATIONS

2.1 The basic option consists of:

One M841 control card and
One 80 column, 64 character line printer.

Its designation is LE8-FA.

2.2 Options to the basic control and line printer are:

LE8-FB 80 column, 64 characters 50 Hz.
LE8-HA 80 column, 96 characters 60 Hz.
LE8-HB 80 column, 96 characters 50 Hz.
LE8-JA 132 column, 64 characters 60 Hz.
LE8-JB 132 column, 64 characters 50 Hz.
LE8-KA 132 column, 96 characters 60 Hz.
LE8-KB 132 column, 96 characters 50 Hz.
LE8-VA 64 Char Scientific Drum
LE8-VE 64 Char EDP Drum
LE8-WA 96 Char Scientific Drum
LE8-WE 96 Char EDP Drum

2.3 The interface is contained on one 8½" Quad Board whose pins are defined by the 8E bus.

2.4 Temperature limits:

32 F to 155° F
Relative humidity: 0 to 95% non-condensing
Power Required: 650 MA at +5 volts.

	SIZE	CODE	NUMBER	REV
	A	SP	LE8-0-1	A

DEC FORM NO DEC 16-(381)-1022-N370 DRA 108

3. PROGRAMMING

3.1 IOT coding is as follows:

Mnemonic	IOT	Function
PSKF	6661	Skip if Flag = 1
PCLF	6662	Clear Flag
PSKE	6663	Skip on Error or Not Ready
PSTB	6664	Strobe, Load Buffer
PSIE	6665	Set Interrupt Enable
PCLF, PSTB	6666	Clear Flag, Load Character
PCIE	6667	Clear Interrupt Enable

Note: Initialize Resets Interrupt Enable, to disable interrupts.

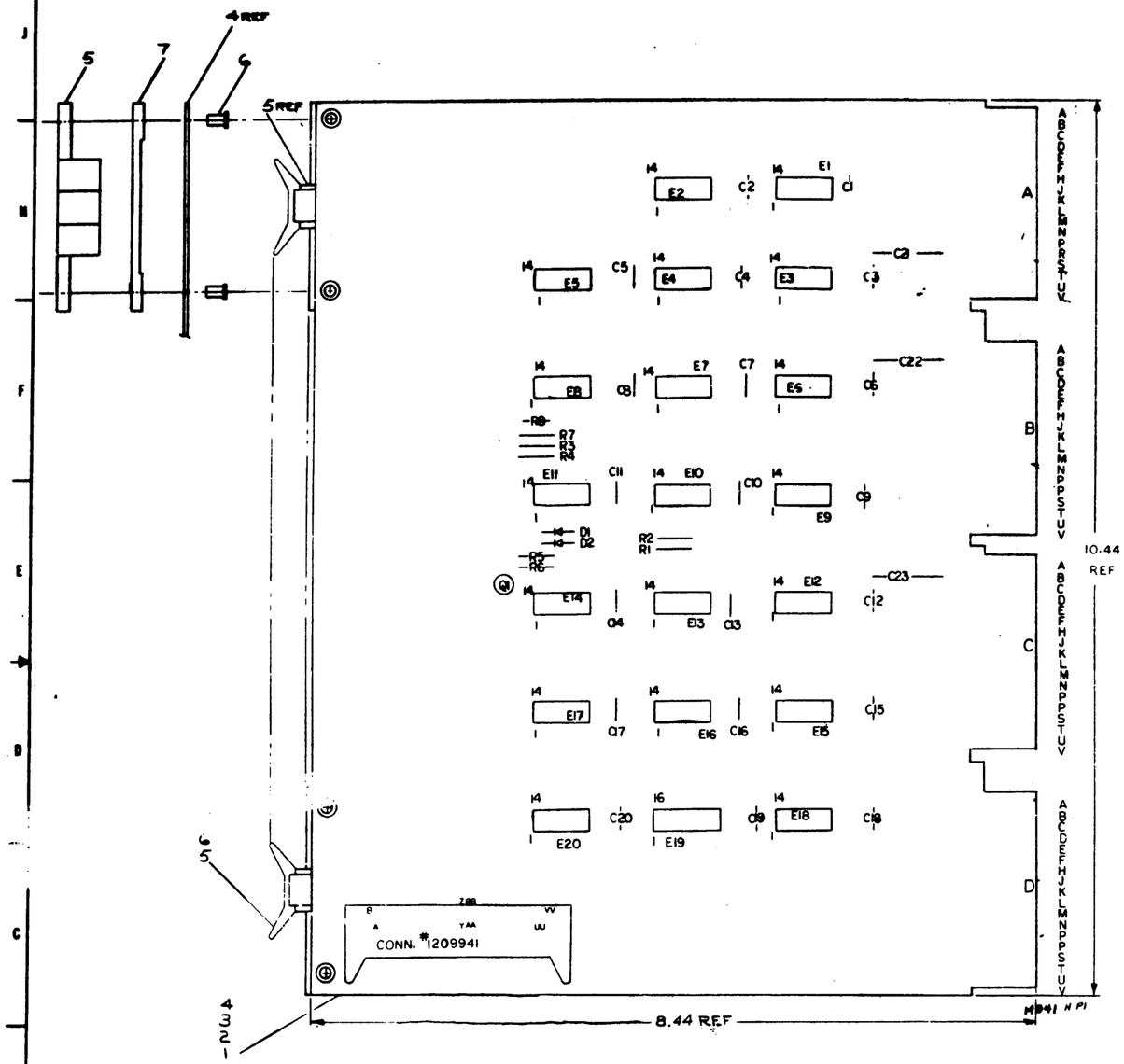
3.2 There are no maintenance instructions.

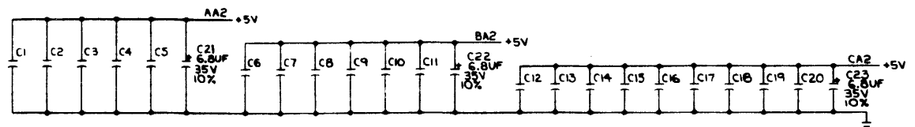
3.3 The line printer uses the standard ASCII character set. The lease significant bit appears in AC bit 11.

3.4 There are no operator controls on the control board. Operator controls on the printer are:

Top of Form - Advances paper to top of form
Paper Step - Advances paper one line at a time, disabled on line.
On line/Off line - Selects mode of operation
Master Clear - Initializes printer to insure proper state of electronic elements.
Print Inhibit - Stop printing action.

NOTES:
1. UNLESS OTHERWISE NOTED:
RESISTORS = 1K 1/4W 5%
DIODES = D664
CAPACITORS = .01UF, 100V, 20%





DEC 6.81	A	16			
DEC 314	1	A			
DEC 380	1	A			
IC TYPE					

2	R7, R8	RES 3.3K 1/4W 5%	13003439	25
1	E1	I.C. DEC 7400	1905575	24
1	[illegible]	[illegible]	[illegible]	23
4	E10, E15, E5, E14	IC DEC 6811	1904705	22
1	E6	IC DEC 314	1904704	21
2	E2, E13	IC DEC 7404	1904686	20
1	E19	IC DEC 8251	1904598	19
4	E3, E7, E12, E18, E20	IC DEC 380	1904685	18
				17
1	E16	IC DEC 7410	1905576	16
5	E4, E8, E9, E11, E17	IC DEC 74H	1905547	15
1	Q1	TRANSISTOR DEC 30048	1904700	14
1	R2	RES 470 1/4W 5%	13003316	13
4	R1, R3, R4, R5	RES 1K 1/4W 5%	13003319	12
1	R6	RES 100 1/4W 5%	13003299	11
2	D1, D2	DIODE D664	1102112	10
20	C1-C20	CAP .01UF 100V 20% DISC	1001610	9
4	C21-C23	CAP 6.8UF 35V 10%	1003306	8
4		SPACER (CABLE CLAMP)	1201704	7
8		SCREW 6-32 x 1/4 STAINLESS	4000780	6
4		HANDLE FLIP CHIP-MAGENTA	3004117-06	5
1		PRINTED CIRCUIT BOARD	8553814	4
REF		SCHEM & HISTORY LIST	B-NN-M841-S-1	3
REF		ASSY DRAWING, HOLE LAYOUT	B-NN-M841-P-1	2
REF		X-Y COORDINATE HOLE LOC.	X-CO-M841-P-1	1
QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	

PARTS LIST

3004-B	2N3646		
D664	1N3606		
DEC NO.	EIA NO.	DEC NO.	EIA NO.

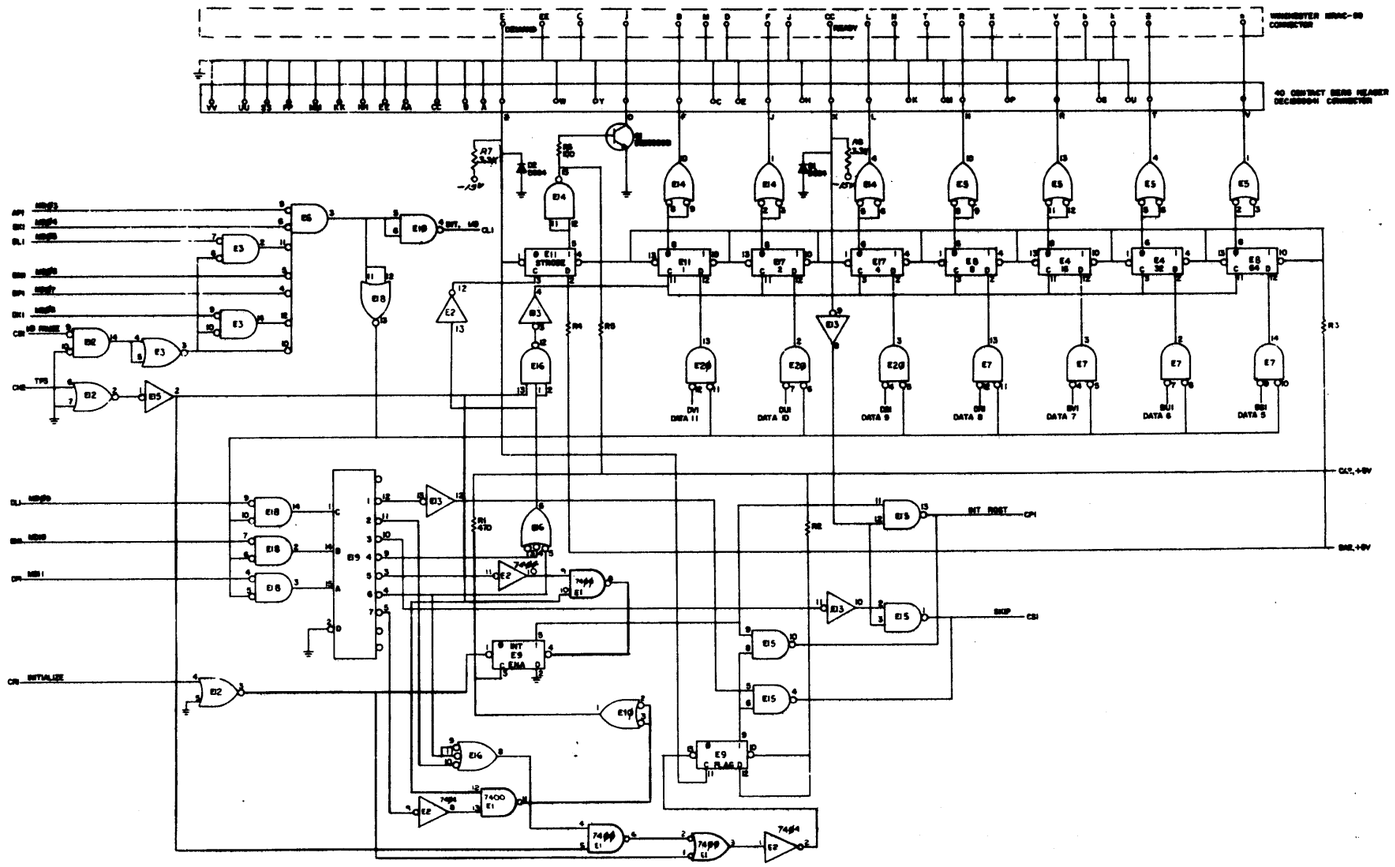
ETCH BOARD REV F H

EQUIPMENT CORPORATION

LINE PRINTER CONTROL

E CS M841-0-1 K

SIZE B



MOORE			EQUIPMENT CORPORATION
SHEET			LINE PRINTER CONTROL
SIZE NONE			CSM841-0-1 K
SHEET 2 OF 2			

CSM841-0-1 K

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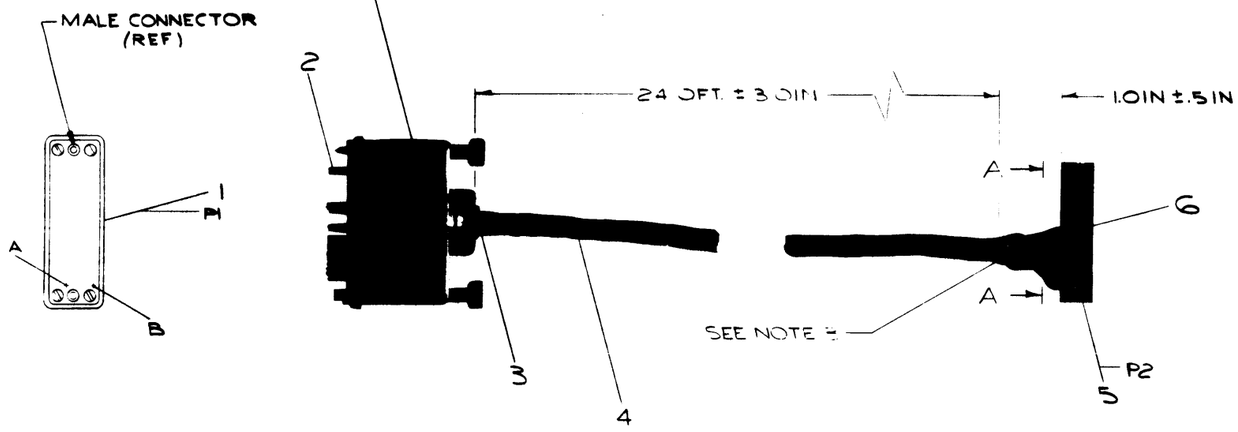
WIRE TABLE

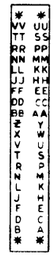
ITEM NO	AWG	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
4	22	RED	P1-M	2	P2-C	6
		YEL	J		D	
		RED	D		E	
		BLU	B		F	
		BLU	J		H	
		BLK	F		J	
		BLK	N		K	
		GRN	L		L	
		RED	T		M	
		WHT	R		N	
		BLK	X		P	
		WHT	V		R	
		BLK	b		S	
		RED	Z		T	
		BLK	k		U	
		BRN	D		V	
		RED	EE		W	
		GRN	CC		X	
		BLK	C		Y	
		YEL	P1-E	2	Z	6
4	22	ORN	SEE NOTE 4			
		YEL	SEE NOTE 4			

TWP

NOTES:
1. ITEMS NO 2 & 6 TO BE CRIMPED TO WIRES BEFORE IT IS INSERTED INTO ITEMS NO 1 & 5.
2. THE FOLLOWING "WINCHESTER ELECTRONICS" CRIMPING TOOLS CAN BE USED.
   A.) CRIMPER #107-0903-2A
   B.) INSERTION TOOL #107-1015
   C.) REMOVAL TOOL #107R-1001
3. AT LEAST ONE TWIST OF EACH PAIR MUST SHOW BEYOND CABLE JACKET.
4. WIRES TO BE CUT BACK BEYOND CABLE JACKET.



PIN ASSIGNMENTS



* (ASTERISK) INDICATES PIN SLOT NOT USED

VIEW A-A
(BERG 40 CONTACT CONNECTOR)

QTY.	DESCRIPTION	PART NO.	ITEM NO.
20	PIN, #48015 BERG ELECTRONICS	12 10089-4	6
1	HOUSING 40 CONTACT BERG	12 10090-0	5
A/R	CABLE #1324 ALFA 22 COND.	9107707	4
A/R	TAPE, DOUBLE BACK	9007834	3
20	PIN, CONN #100-1020P WINCHESTER	1209629	2
1	PLUG #MRACSOPJTCH8 WINCHESTER	1209726	1

PARTS LIST

REVISIONS	CHANGE NO	REV
CHK.	LEA-00001	A
CHK.	LEB-00002	B

FIRST USED ON OPTION/MODEL: LE-8

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES: FRACTIONS ± 1/64, DECIMALS ± .005, ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST
FINISH

		DATE
DRN.	L. Gargiulo	10-26-70
CHK'D.	[redacted]	11/9/70
ENG.	L. Narhi	11-5-70
PROJ. ENG.	L. Narhi	11-5-70
PROD.	Larry Baker	11/9/70

NEXT HIGHER ASSY: M841
SCALE: NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: CABLE, DATA PRODUCTS TO M841

SIZE	CODE	NUMBER	REV.
D	IA	7006964-0-0	B

DIST.

DEC FORMS NO 100

SIZE D CODE IA NUMBER 7006964-0-0 REV B

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 4/72

TITLE LE8 ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	LE8 00004	NARHI	2/74	L Narhi	3-3-74

ENG	APPD	SIZE	CODE	NUMBER	REV
L. NARHI		A	SP	LE8-0-3	A

DEC 16-(327)-1071-N971

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE LE8 ACCEPTANCE PROCEDURE

1.0 Equipment required
- 1.1 LE8-Control Module - M841
- 1.2 LE8-Control Cable - 7006964
- 1.3 Line Printer Models -
  - LP01-FA/FB 64 Char/80Col
  - LP01-HA/HB 96 Char/80Col
  - LP02-JA/JB 64 Char/132Col
  - LP02-KA/KB 96 Char/132Col
  - LE8-VA 64 Char Scientific Drum
  - LE8-VE 64 Char EDP Drum
  - LE8-WA 96 Char Scientific Drum
  - LE8-WE 96 Char EDP Drum
- 1.4 PDP-8E, 8M or 8F and Teletype
- 1.5 LE8 Line Printer Diagnostic Maindec-08-DILPA-A
- 1.6 Paper LP01 - 1 Part DEC # 36-9829
  - 6 Part Dec # 18-9536
  - LP02 - 1 Part Dec # 36-9141
  - 6 Part Dec # 36-10293

2.0 Preliminary Inspection
- 2.1 Check the M841 for proper revision and date coding.
- 2.2 Insure that all paper work is complete (Keysheet ECO Status Sheet, Etc)

3.0 Acceptance Procedure for LP01 or LP02 and LE8
- 3.1 Turn the machine power on.
- 3.2 Place paper in printer so that it covers the hammers and the bottom paper out switch but not the top paper out switch.
- 3.3 Turn breaker on, wait 10 seconds, "READY" light should not turn on, and "PAPER FAULT" light should be lit.
- 3.4 Turn breaker off, and place paper in printer so that it covers the hammers and the top paper out switch, but not the bottom paper out switch.
- 3.5 Turn breaker on, "READY" light should not turn on, and "PAPER FAULT" light should be lit.
- 3.6 Open drum gate, remove paper; press "TOP OF FORM" switch and place in a continous form (line up perforation with arrow).
- 3.7 Close drum gate, "READY" should light within 15 seconds. Check "TOP OF FORM" and "PAPER STEP" switches for correct operation. Correct operation is paper step will advance one line and top of form will advance to the next page.
- 3.8 Press "ON LINE" switch. Check "TOP OF FORM" and "PAPER STEP" switch. Both switches should not operate.
- 3.9 Press "ON LINE" switch and "MASTER CLEAR" switch. Check "TOP OF FORM" and "PAPER STEP" switch. Both switches should operate.
- 3.10 Refer to the diagnostic write-up and run tests 1 thru 6.

SIZE	CODE	NUMBER	REV
A	SP	LE8-0-3	A

DEC FORM NO DEC 16-(381)-1022-N370
DRA 108

3.11 Stop diagnostic from running; press "PRINT INHIBIT" switch, press "ON LINE" switch, restart diagnostic form part 1 of test 1.

3.12 "PRINT INHIBIT" light should turn on and the diagnostic run as before. Continue for 1 minute. Turn "PRINT INHIBIT" switch off.

3.13 Diagnostic should run as before

4.0 Refer to the Diagnostic write-up and run tests 1 thru 6 in an Auto Sequence. Run for a period of 15 minutes. Tests should repeat until terminated.

4.1 Run Power supply Test for 10 minutes.

4.1.1 Refer to Diagnostic write-up for the starting procedure for this test.

4.2 Ribbon run until completion

4.2.1 Load address 0203 and start. If paper does not advance one step printer is in error. Diagnostic will halt at completion of test. Manually advance ribbon to inspect for damage.

5 0 Run test 1 thru 6 using six copy carbon paper. Check the quality of the copies to the copies in the T&I envelope.

6.0 Shipping

6.1 Refer to the Accessory List (A-AL-LE8-0-4) to determine the shipping hardware and software.

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

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CUSTOMER PRINT SET INDEX

SEQUENCE		SEQUENCE	
DRAWING DIRECTORY	B-DD-LE8-0		
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CABLE	D-IA-7006964-0-0		
ACCEPTANCE PROC	A-SP-LE8-0-3		

MFG. SET

TEST PROCEDURE	A-SP-LE8-0-2
ACCEPTANCE PROCEDURE	A-SP-LE8-0-3

THIS IS PRINT SET

UNIT VARIATIONS

VAR	TITLE	PRINT SET LE8-Ø
LE8-FA	80 COLUMN, 64 CHAR, 60HZ	X
LE8-FB	80 COLUMN, 64 CHAR, 50HZ	X
LE8-HA	80 COLUMN, 96 CHAR, 60HZ	X
LE8-HB	80 COLUMN, 96 CHAR, 50HZ	X
LE8-JA	132 COLUMN, 64 CHAR, 60HZ	X
LE8-JB	132 COLUMN, 64 CHAR, 50HZ	X
LE8-KA	132 COLUMN, 96 CHAR, 60HZ	X
LE8-KB	132 COLUMN, 96 CHAR, 50HZ	X
LE8-VE	80/132 COL. 64 CHAR SCIENTIFIC	
	DRUM	X
LE8-VA	80/132 COL, 64 CHAR EDP DRUM	X
LE8-WE	80/132 COL, 96 CHAR SCIENTIFIC	
	DRUM	X
LE8-WA	80/132 COL, 96 CHAR EDP DRUM	X

REVISIONS	DATE	CHG. NO.	REV
	3-74	LE8-4 ORIGINATED	B
	3-74	LE8-5	C

USED ON OPTION/MODEL	
PDP8E	
PDP8F	
PDP8M	

SHEET 1 OF 2

DRN. L Yarbu	DATE 3-4-74	TITLE LINE PRINTER & CONTROL
CHK'D. L. Gilbert	DATE 3-4-74	
PROJ ENG. L. NARHI	DATE 2/6/74	
PROD.	DATE	SIZE B / CODE DD / NUMBER LE8-0 / REV C
FIELD SERV.	DATE 3-4-74	DIST

DEC 16-12351-1062-14-8572

DRB 106

ELECTRICAL

CUSTOMER PRINT SET	MFG. SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	A-SP-LE8-0-1	B	3	ENGINEERING SPEC	
	X		A-SP-LE8-0-2	B	3	TEST PROCEDURE	
X	X		A-SP-LE8-0-3	B	3	ACCEPTANCE PROCEDURE	
X			A-AL-LE8-0-4	A	1	ACCESSORY LIST	
X		2	E-CS-M841-0-1	#	2	LINE PRINTER CONTROL	M841
			B-MH-M841-0-6		1	MODULE HISTORY	

MECHANICAL

CUSTOMER PRINT SET	MFG SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO./FILE DATE
X		1	A-PL-LE8-0-0	A	1	PARTS LIST	
X		3	D-IA-7006964-0-0	#	1	CABLE, DATA PRODUCTS TO M841	
		4	A-ML-LP01-0		1	LINE PRINTER (80 COLUMN)	LP01
		5	E-UA-LP02-0-0		1	LINE PRINTER (132 COLUMN)	LP02
		6	B-DD-LP05-0			LINE PRINTER (80/132 COLUMN)	LP05

CUSTOMER PRINT SET CODES	
	X = PRINT OF DOCUMENT INCLUDED IN PRINT SET
	C = INCLUDES ALL PRINTS INDICATED ON DOCUMENT
	S = CONFIDENTIAL AUTHORIZED SIGNATURE REQUIRED

TITLE		SIZE	CODE	NUMBER	REV
LINE PRINTER & CONTROL	SHEET 2 OF 2	B	DD	LE8-0	C

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 4/72

TITLE LE8 ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	LE8-00004	NARHI	2/74	L Narhi	3-3-74
B	ECO CHANGE	LE8-00005	NARHI	3/74	L. Narhi	4/9/74

ENG	APPD	SIZE	CODE	NUMBER	REV
L. NARHI		A	SP	LE8-0-3	B

DEC 16-(327)-1071-N971
DRA 107

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE LE8 ACCEPTANCE PROCEDURE

1.Ø Equipment required
- 1.1 LE8-Control Module - M841
- 1.2 LE8-Control Cable - 7006964
- 1.3 Line Printer Models -
  - LPØ1-FA/FB 64 Char/80Col
  - LPØ1-HA/HB 96 Char/80Col
  - LPØ2-JA/JB 64 Char/132Col
  - LPØ2-KA/KB 96 Char/132Col
  - LE8-VE 64 Char Scientific Drum
  - LE8-VA 64 Char EDP Drum
  - LE8-WE 96 Char Scientific Drum
  - LE8-WA 96 Char EDP Drum
- 1.4 PDP-8E, 8M or 8F and Teletype
- 1.5 LE8 Line Printer Diagnostic Maindec-08-DILPA-A
- 1.6 Paper LPØ1 - 1 Part DEC # 36-9829
  - 6 Part Dec # 18-9536
  - LPØ2 - 1 Part Dec # 36-9141
  - 6 Part Dec # 36-1Ø293

2.0 Preliminary Inspection
- 2.1 Check the M841 for proper revision and date coding.
- 2.2 Insure that all paper work is complete (Keysheet ECO Status Sheet, Etc)

3.0 Acceptance Procedure for LPØ1 or LPØ2 and LE8
- 3.1 Turn the machine power on.
- 3.2 Place paper in printer so that it covers the hammers and the bottom paper out switch but not the top paper out switch.
- 3.3 Turn breaker on, wait 10 seconds, "READY" light should not turn on, and "PAPER FAULT" light should be lit.
- 3.4 Turn breaker off, and place paper in printer so that it covers the hammers and the top paper out switch, but not the bottom paper out switch.
- 3.5 Turn breaker on, "READY" light should not turn on, and "PAPER FAULT" light should be lit.
- 3.6 Open drum gate, remove paper; press "TOP OF FORM" switch and place in a continous form (line up perforation with arrow).
- 3.7 Close drum gate, "READY" should light within 15 seconds. Check "TOP OF FORM" and "PAPER STEP" switches for correct operation. Correct operation is paper step will advance one line and top of form will advance to the next page.
- 3.8 Press "ON LINE" switch. Check "TOP OF FORM" and "PAPER STEP" switch. Both switches should not operate.
- 3.9 Press "ON LINE" switch and "MASTER CLEAR" switch. Check "TOP OF FORM" and "PAPER STEP" switch. Both switches should operate.
- 3.10 Refer to the diagnostic write-up and run tests 1 thru 6.

	SIZE	CODE	NUMBER	REV
	A	SP	LE8-0-3	B

DEC FORM NO DEC 16-(381)-1022-N370
DRA 108

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE LE8 ACCEPTANCE PROCEDURE

3.11 Stop diagnostic from running; press "PRINT INHIBIT" switch, press "ON LINE" switch, restart diagnostic form part 1 of test 1.

3.12 "PRINT INHIBIT" light should turn on and the diagnostic run as before. Continue for 1 minute. Turn "PRINT INHIBIT" switch off.

3.13 Diagnostic should run as before

4.0 Refer to the Diagnostic write-up and run tests 1 thru 6 in an Auto Sequence. Run for a period of 15 minutes. Tests should repeat until terminated.

4.1 Run Power supply Test for 10 minutes.

4.1.1 Refer to Diagnostic write-up for the starting procedure for this test.

4.2 Ribbon run until completion

4.2.1 Load address 0203 and start. If paper does not advance one step printer is in error. Diagnostic will halt at completion of test. Manually advance ribbon to inspect for damage.

5 0 Run test 1 thru 6 using six copy carbon paper. Check the quality of the copies to the copies in the T&I envelope.

6.0 Shipping

6.1 Refer to the Accessory List (A-AL-LE8-0-4) to determine the shipping hardware and software.

	SIZE	CODE	NUMBER	REV
	A	SP	LE8-0-3	B

DEC FORM NO DEC 16—(381)—1022—N370
DRA 108

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MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 2/25/71

TITLE LE8 TEST PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	LE8-00004	NARHI	2/74	L Harlu	3/3/74
B	ECO CHANGE	LE8-00005	NARHI	3/74	L Harlu	4/9/74

ENG	APPD	SIZE	CODE	NUMBER	REV
Larry Harlu	BF Gift	A	SP	LE8-0-2	B

DEC FORM NO.
DRA 107

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MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 8-17-70

TITLE LE8-XX Line Printer Inteface to the PDP-8/E

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	ECO CHANGE	LE8-00004	NARHI	2/74	L. Narhi	3/4/74
B	ECO CHANGE	LE8-00005	NARHI	3/74	L Narhi	4/9/74

ENG	APPD	SIZE	CODE	NUMBER	REV
Larry Narhi	Larry Narhi	A	SP	LE8-0-1	B

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE LE8-XX LINE PRINTER INTERFACE TO THE PDP-8/E

1. OVERALL DESCRIPTION

The LE8 is an interface to several models of the Data Products Line Printer to the PDP-8/E computer. The logic is designed entirely of TTL integrated circuits for low coast and high speed.

2. GENERAL SPECIFICATIONS

2.1 The basic option consists of:

One M841 control card and
One 80 column, 64 character line printer.

Its designation is LE8-FA.

2.2 Options to the basic control and line printer are:

LE8-FB 80 column, 64 characters 50 Hz.
LE8-HA 80 column, 96 characters 60 Hz.
LE8-HB 80 column, 96 characters 50 Hz.
LE8-JA 132 column, 64 characters 60 Hz.
LE8-JB 132 column, 64 characters 50 Hz.
LE8-KA 132 column, 96 characters 60 Hz.
LE8-KB 132 column, 96 characters 50 Hz.
LE8-VE 64 Char Scientific Drum
LE8-VA 64 Char EDP Drum
LE8-WE 96 Char Scientific Drum
LE8-WA 96 Char EDP Drum

2.3 The interface is contained on one 8½" Quad Board whose pins are defined by the 8E bus.

2.4 Temperature limits:

32 F to 155° F
Relative humidity: 0 to 95% non-condensing
Power Required: 650 MA at +5 volts.

SIZE	CODE	NUMBER	REV
A	SP	LE8-0-1	B

DEC FORM NO DEC 16-(381)-1022-N370 DRA 108

3. PROGRAMMING

3.1 IOT coding is as follows:

Mnemonic	IOT	Function
PSKF	6661	Skip if Flag = 1
PCLF	6662	Clear Flag
PSKE	6663	Skip on Error or Not Ready
PSTB	6664	Strobe, Load Buffer
PSIE	6665	Set Interrupt Enable
PCLF, PSTB	6666	Clear Flag, Load Character
PCIE	6667	Clear Interrupt Enable

Note: Initialize Resets Interrupt Enable, to disable interrupts.

3.2 There are no maintenance instructions.

3.3 The line printer uses the standard ASCII character set. The lease significant bit appears in AC bit 11.

3.4 There are no operator controls on the control board. Operator controls on the printer are:

Top of Form - Advances paper to top of form
Paper Step - Advances paper one line at a time, disabled on line.
On line/Off line - Selects mode of operation
Master Clear - Initializes printer to insure proper state of electronic elements.
Print Inhibit - Stop printing action.