

**CR11**  
**card reader**  
**engineering drawings**

1st Edition August 1971

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## CR11 ENGINEERING DRAWINGS

Drawing Number	Title
A-ML-CR11-0	Card Reader Control
A-PL-CR11-0-0	Card Reader Control, Parts List
D-MU-CR11-0-01	CR11 Module Utilization
A-PL-CR11-0-01	CR11 Module Parts List
D-CS-M8290-0-1	CR11 Interface
D-IA-7008738	Card Reader Cable





8

7

6

5

4

3

2

1

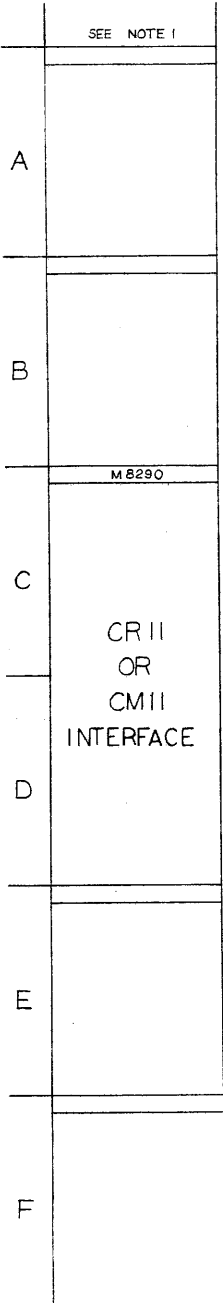
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D

C

B

A



NOTE:  
1. SLOT 1, 2, 3 OR 4 IN DD11-A

CHK	REVISIONS	CHANGE NO.	REV.
		CR11-00003	A
		M. Tomlin	2-16-72
		KRISHNA	2-18-72
		B. S. S. S. S.	2-18-72

DEC FORM NO. DRD 102A

8

7

6

5

4

3

2

1

6

FIRST USED ON OPTION/MODEL CR11	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED	DRN	DATE	 <b>digital</b> EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
UNLESS OTHERWISE SPECIFIED	CHK'D	DATE		
TOLERANCES	ENG	DATE		
DECIMALS = 0.005	PROJ. ENG.	DATE		
FRACTIONS = 1/64	PRCD	DATE	TITLE <b>MODULE UTILIZATION</b>	
ANGLES = 0°30'				
FINAL SURFACE QUALITY			SIZE CODE <b>D ML CR11-0-01</b>	
REMOVE BURRS AND BREAK SHARP CORNERS				
MATERIAL	NEXT HIGHER ASSY		NUMBER <b>A</b>	
FINISH	SCALE			
	SHEET	OF	DIST.	
	1	1		

A

B

A

6

NUMBER  
D ML CR11-0-01



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PARTS LIST

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1		ETCHED CIRCUIT BOARD	5009885	1
2	K-C0-M8290-0-4	XY-DIMENSION HOLE LOCATION		
3	D-A1-M8290-0-5	ASSY BILLING HOLE LOCATION		
4	B-MH-M8290-0-6	MODULE ECO HISTORY		
5		HANDLE FLIP-CHIP MAGENTA	5006337-06	4
6		EVENTS 47 STIMPSON	5006732	8
7		32-40 PIN CONNECTOR	1209941	1
8	E17	IC SOCKET	1209838	1
9	C53 THRU C56	CAP 6.8UF 35V 20% 5 TANT	1000067	4
10	C1 THRU C52	CAP .01UF 100V 20% 55C	1001530	52
11	C62	CAP .005UF 100V 20%	1001765	1
12	C64	CAP .330UF 100V 5%	1000023	1
13	C57 THRU C61, C63	CAP 4.70UF 100V 5%	1000024	6
14	D1 THRU D4	DIODE DEC 663	1100114	4
15	R32	RESISTOR 100.0 1/4W 5%	1300229	1
16	R48	RESISTOR 180.0 1/4W 5%	1301322	1
17	R46	RESISTOR 47.0 1/4W 5%	1300202	1
18	R1, R2, R3, R6, R8, R9, R11	RESISTOR 220.0 1/4W 5%	1300271	7
19	R10, R47	RESISTOR 390.0 1/4W 5%	1300309	2
20	R4, R5, R7, R12, R29, R30, R31, R33 THRU R45	RESISTOR 1K.0 1/4W 5%	1300365	20
21	R13 THRU R28	RESISTOR 560.0 1/4W 5%	1301590	16
22	E8, E11, E15, E22	IC DEC 4015	1910087	4
23	E49, E50	IC DEC 7408	1910155	2
24	E7, E12, E24	IC DEC 7437	1910091	3
25	E5, E47, E53	IC DEC 7474	1905647	3
26	E3, E45, E52	IC DEC 7400	1905575	3
27	E4	IC DEC 7440	1905579	1
28	E23	IC DEC 7473	1905587	1
29	E16, E20, E35, E44	IC DEC 7402	1903004	4
30	E36	IC DEC 74H00	1905056	1
31	E27 THRU E30, E33, E34, E39	IC DEC 380	1909485 *	7
32	E51	IC DEC 74H74	1905627	1
33	E6, E13, E25	IC DEC 7404	1905626	3
34	E10, E19, E10F, E14F, E21, E26, E31, E38, E43, E48	IC DEC 8881	1909705	12
35	E32, E37, E42	IC DEC 8242	1905712	3
36	E19, E40, E41	IC DEC 8815	1905713	3
37	E46	IC DEC 74H04	1909931	1

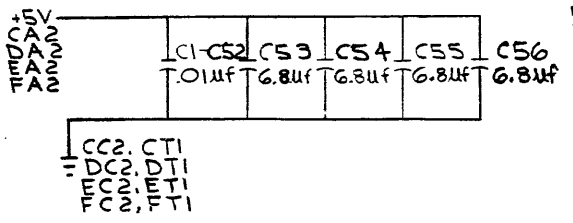
ALLOWABLE SUBSTITUTION LIST			
ORIG PART #	SUBSTITUTION PART		ITEM NO.
	DESCRIPTION	PART #	
1909485	IC 11380	1911113	31

NOTES:

- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE SYSTEM UNIT. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER, AND CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT RIGHT.
- JUMPERS TO BE USED AT CONNECTIONS A3-A12, V3-V8, J1 AND J2.
- ON ITEM #31, ALL 7 CHIPS MUST BE EITHER DEC 380'S OR ITS SUBSTITUTE, 11380 I.C.S. COMBINATIONS ARE NOT ALLOWED ON THE SAME OPTION.

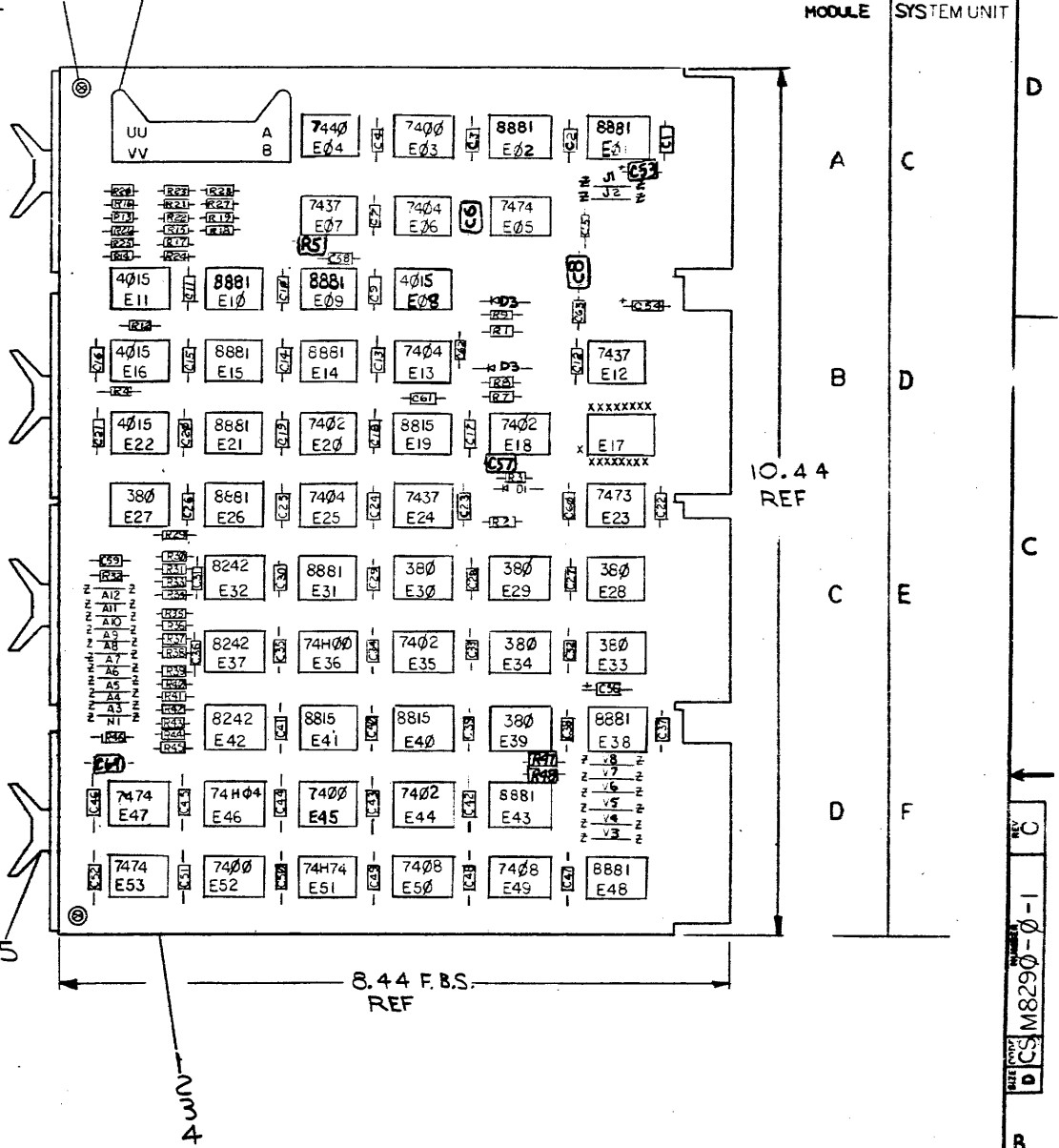
\*SEE ALLOWABLE SUBSTITUTION LIST & NOTE 3.  
GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY.  
EXCEPTIONS ARE:

IC TYPE	GND	+5V
DEC 380	PIN 1	PIN 8
DEC 4015	PIN 8	PIN 16
DEC 7473	PIN 11	PIN 4
DEC	PIN	PIN
DEC	PIN	PIN
DEC	PIN	PIN



COMPONENT PLACEMENT

PIN NOMENCLATURE



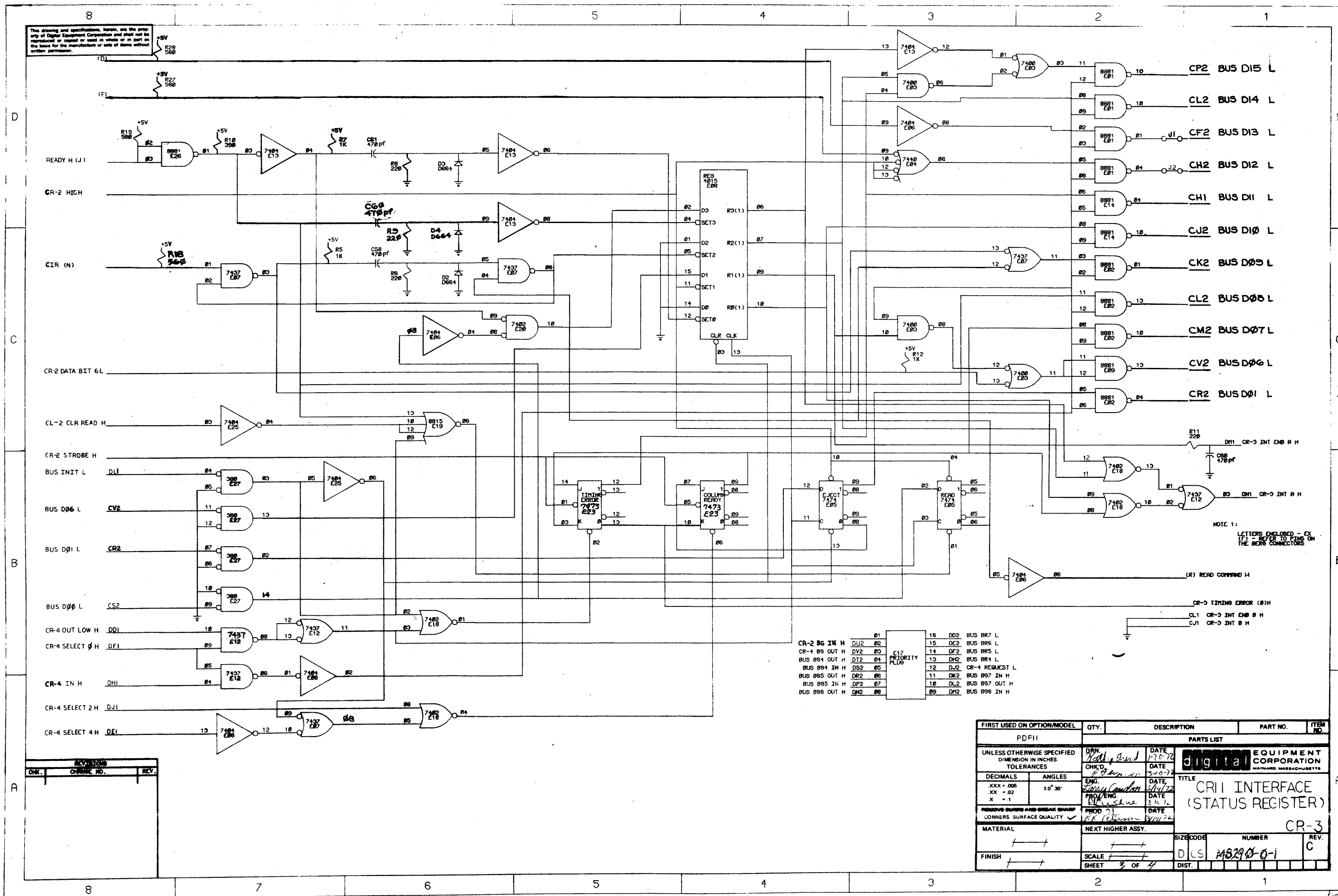
REV	DATE	BY	CHK
1	6-26-72	K. KRISHNA	
2	6/27/72	K. KRISHNA	
3	1/14/73	L. LONDON	
4	2-4-73		

ETCH BOARD REV	B C								
FIRST USED ON OPTION/NGCEL	QTY.	DESCRIPTION		PART NO.	ITEM NO.				
PDPII		PARTS LIST							
UNLESS OTHERWISE SPECIFIED	DRN	DATE	digital EQUIPMENT CORPORATION						
UNLESS OTHERWISE SPECIFIED	CHK	DATE	TITLE						
TOLERANCES	PROJ	DATE	CR11 INTERFACE						
DECIMALS FRACTIONS ANGLES	PROD	DATE	SIZE CODE NUMBER REV						
± .001 ± .184 ± .030			Dics M8290-2- C						
FINAL SURFACE QUALITY			SHEET 1 OF 4						
REMOVE BURRS AND BREAK SHARP CORNERS			DIST.						
MATERIAL									
FINISH									





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NOTE 1:  
LETTERS ENCLOSED - EX  
(F) - REFER TO PINS ON  
THE BEER CONNECTORS

CR-2 B6 IN H	B1	16	D02	BUS BR7 L	
CR-4 B9 OUT H	DV2	B3	15	DE2	BUS BR6 L
BUS B94 OUT H	D12	B4	14	DF2	BUS BR5 L
BUS B94 IN H	DS2	B5	13	DM2	BUS BR4 L
BUS B95 OUT H	DR2	B6	12	DJ2	CR-4 REQUEST L
BUS B95 IN H	DP2	B7	11	DK2	BUS B97 IN H
BUS B96 IN H	DN2	B8	10	DL2	BUS B97 OUT H
BUS B96 OUT H	DN2	B8	9	DM2	BUS B96 IN H

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDF11				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES.	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS		
TOLERANCES	DATE	TITLE		
DECIMALS	DATE	CR1 INTERFACE (STATUS REGISTER)		
ANGLES	DATE	NUMBER		
.XXX - .005	DATE	REV.		
.XX - .02	DATE	C		
X - .1	DATE	SIZE CODE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE	SCALE		
MATERIAL	DATE	SHEET		
NEXT HIGHER ASSY.	DATE	3 OF 4		
FINISH	DATE	DIST.		

CHK.	CHANGE NO.	REV.

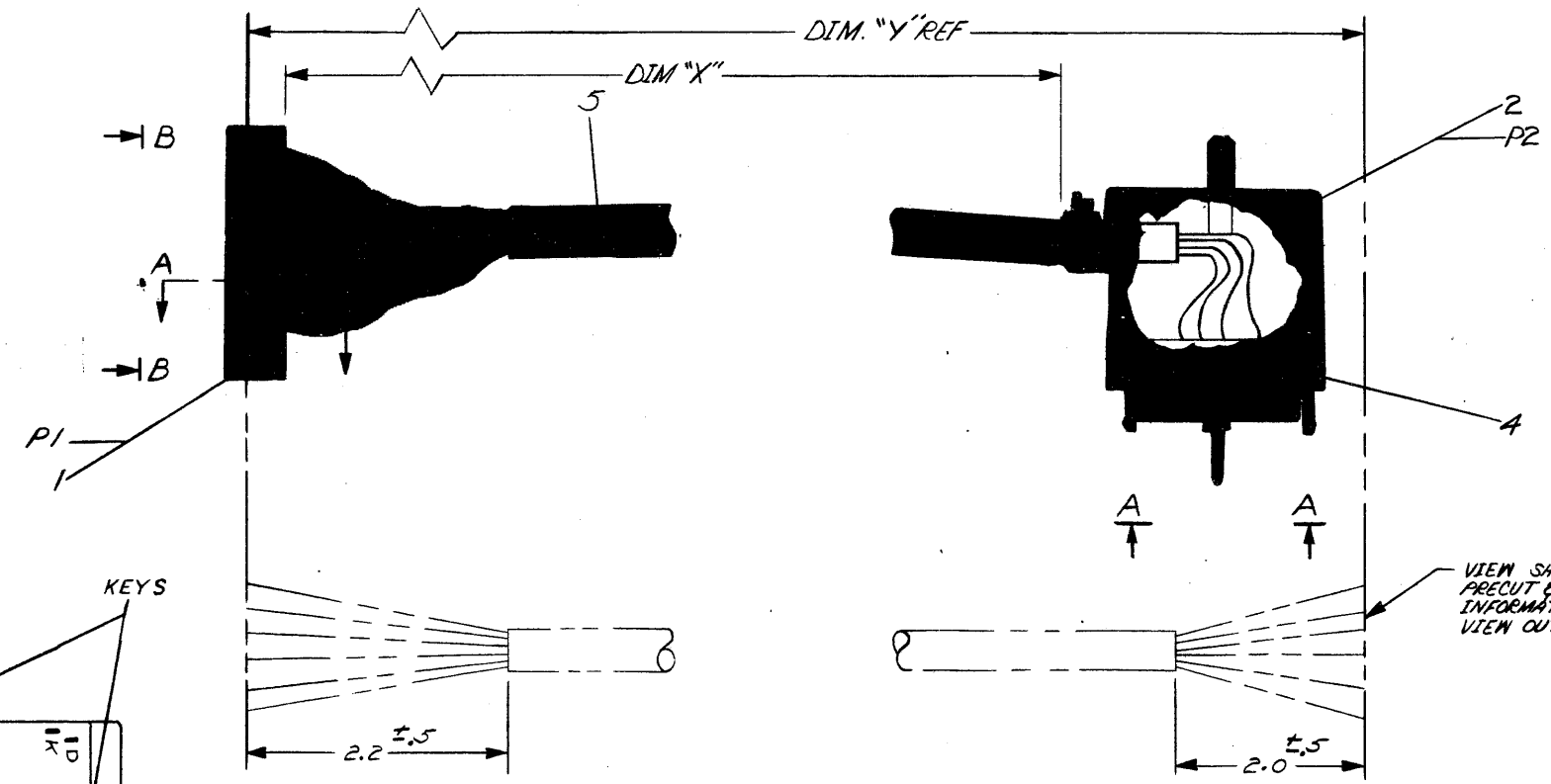
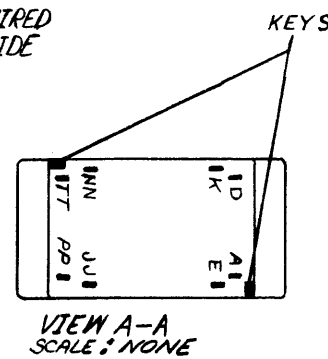
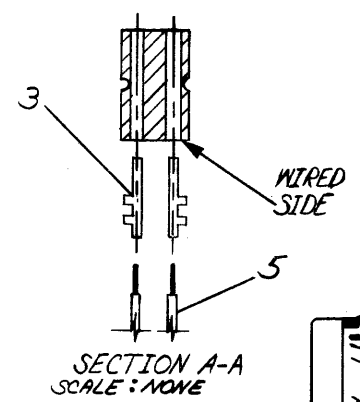
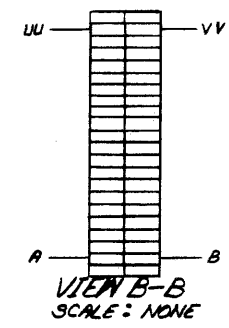


WIRE TABLE						
ITEM NO	DESCRIPTION	FROM	TO	SIGNAL NAME	ITEM NO	DESCRIPTION
5	24 TWP	RED P1-TT	P2-U	ROW 6 DATA	5	24 TWP
		BRN P1-SS	P2-W	RETURN		
		GRY P1-RR	P2-V	ROW 7 DATA		
		RED P1-PP	P2-X	RETURN		
		GRN P1-NN	P2-Y	ROW 8 DATA		
		WHT P1-MM	P2-CC	RETURN		
		ORN P1-LL	P2-Z	ROW 9 DATA		
		WHT P1-KK	P2-DD	RETURN		
		BLU P1-UJ	P2-C	ROW 10 DATA		
		WHT P1-HH	P2-H	RETURN		
		BLU P1-FF	P2-M	ROW 4 DATA		
		YEL P1-EE	P2-S	RETURN		
		BLU P1-DD	P2-K	ROW 2 DATA		
		BLK P1-CC	P2-P	RETURN		
		RED P1-BB	P2-A	ROW 12 DATA		
		BLU P1-AA	P2-E	RETURN		
5	24 TWP	ORN P1-Z	P2-N	ROW 5 DATA	5	24 TWP
		BLK P1-Y	P2-T	RETURN		

WIRE TABLE						
ITEM NO	DESCRIPTION	FROM	TO	SIGNAL NAME	ITEM NO	DESCRIPTION
5	24 TWP	GRN P1-X	P2-L	ROW 3 DATA	5	24 TWP
		BLK P1-W	P2-R	RETURN		
		GRN P1-V	P2-B	ROW 11 DATA		
		YEL P1-U	P2-F	RETURN		
		YEL P1-T	P2-D	ROW 1 DATA		
		ORN P1-S	P2-J	RETURN		
		GRY P1-R	P2-LL	PICK		
		BLK P1-P	P2-SS	RETURN		
		BRN P1-N	P2-MM	BUSY		
		WHT P1-M	P2-TT	RETURN		
		GRY P1-L	P2-AA	INDEX		
		WHT P1-K	P2-EE	RETURN		
		BRN P1-J	P2-BB	READY		
		BLK P1-H	P2-FF	RETURN		

LEGEND			
NUMBER	DIM "X" (VARIATION)	DIM "Y" (PRECUT)	REF
7008738-15	15 FEET ± 3 IN	15 FEET ± 2 IN	

- NOTES
- MANUFACTURING SHOULD USE MACHINE CRIMPING TOOL FOR THE ASSY OF PINS. (ITEM #3)
  - SPARE WIRES (ORG/RED, GRN/RED) TO BE CUT BACK UNDER CABLE JACKET.
  - PINS (ITEM #4) SHOULD BE CRIMPED USING ELCO HAND TOOL (067515-01) OR THE EQUIVALENT.



P/R	CABLE TWP # & # ANG	9107700	5
32	PIN ELCO # 60-8017-03-13	1210675-1	4
32	SOCKET PIN #8015 BERG	1210089-5	3
1	CONNECTOR ELCO # 00-8016-038-000-704	1210675	2
1	HOUSING BERG # 20383	1210090-0	1

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 8/E				

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES		PARTS LIST	
DECIMALS	ANGLES	DRN. <i>M. Pierce</i>	DATE <i>1/22/72</i>
±0.005	±0° 30'	CHK. <i>J. Kirk</i>	DATE <i>1/22/72</i>
±0.010		ENG. <i>John Kirk</i>	DATE <i>1/22/72</i>
±0.020		PROL. ENG. <i>John Kirk</i>	DATE <i>1/22/72</i>
±0.050		PROD. <i>R. E. Owen</i>	DATE <i>1/22/72</i>

MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV
+	A-PL-CR8-E-0	DIA	7008738-0-0	B

FINISH	SCALE	SHEET	OF	TITLE
+	NONE			CABLE CARD READER INTERFACE

REV	NO	DATE	BY	CHK
1	7008738-0-0	1/22/72	J. KIRK	J. KIRK
2	7008738-00002 B	3-27-72	J. KIRK	J. KIRK
3	7008738-00002 B	4-20-72	J. KIRK	J. KIRK
4	7008738-00002 B	4-20-72	J. KIRK	J. KIRK
5	7008738-00002 B	4-20-72	J. KIRK	J. KIRK