

# PDP-4 summary

## MAIN INSTRUCTIONS

OP				I	Y												
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

00 CAL	JMS 20	CALL
04 DAC	C(Y) ← AC	DEPOSIT AC
10 JMS	C(Y) ← PC. PC ← Y+1	JUMP TO SUBROUTINE
14 DZM	C(Y) ← 0	DEPOSIT ZERO
20 LAC	AC ← C(Y)	LOAD AC
24 XOR	AC ← AC ∨ C(Y)	XOR
30 ADD	AC ← AC + C(Y)	ONE'S COMP. ADD
34 TAD	L:AC ← AC + C(Y)	TWO'S COMP. ADD
40 XCT	execute C(Y)	EXECUTE
44 ISZ	C(Y) ← C(Y)+1. C(Y) = 0: SKIP	INDEX, SKIP IF ZERO
50 AND	AC ← AC ∧ C(Y)	AND
54 SAD	AC ≠ C(Y): SKIP	SKIP IF AC DIFFERENT
60 JMP	PC ← Y	JUMP
64		
70 IOT		IO TRANSFER
74 OPR		OPERATE
76 LAW	AC ← inst. word	LOAD AC WITH INST.

## OPERATE GROUP

1	1	1	1	0	CLA	CLL	rot2	SKP	SNL	SZA	SMA	HLT	RAR	RAL	OAS	CML	CMA
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

750000 CLA	AC ← 0	CLEAR AC
744000 CLL	L ← 0	CLEAR L
741000 SKP	reverse SKIP condition	SKIP
740400 SNL	L ≠ 0: SKIP	] OR
740200 SZA	AC = 0: SKIP	
740100 SMA	AC < 0: SKIP	] AND
741400 SZL	L = 0: SKIP	
741200 SNA	AC ≠ 0: SKIP	] AND
741100 SPA	AC ≥ 0: SKIP	
740040 HLT	HALT	HALT
740020 RAR	L:AC ← rotate L:AC right	ROTATE AC RIGHT
740010 RAL	L:AC ← rotate L:AC left	ROTATE AC LEFT
742020 RTR	RAR twice	ROTATE TWICE RIGHT
742010 RTL	RAL twice	ROTATE TWICE LEFT
740004 OAS	AC ← AC ∨ SR	OR AC SWITCH REG.
740002 CML	L ← ~L	COMPLEMENT L
740001 CMA	AC ← ~AC	COMPLEMENT AC

## IO TRANSFER

1	1	1	0	SUB DEV	DEV						SUB DEV	CLA	P4	P2	P1		
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17