



data systems

PHILIPS

**SUMMARY OF P 350 BASIC AND
PERIPHERAL ASSEMBLER INSTRUCTIONS
WITH THEIR ABSOLUTE EQUIVALENTS**

BASIC INSTRUCTIONS

Instruction	Op Code	Op	Op	Op
ADD		LABEL	LABEL	LABEL
ADDC		COMBINE	LABEL	LABEL

SUMMARY OF INSTRUCTIONS

Instruction	Op Code	Op	Op	Op
SUB		LABEL	LABEL	LABEL
SUBC		LABEL	LABEL	LABEL

Instruction	Op Code	Op	Op	Op

Instruction	Op Code	Op	Op	Op
LUL		LABEL	LABEL	LABEL
LUR		LABEL	LABEL	LABEL
LUL		LABEL	LABEL	LABEL
LUR		LABEL	LABEL	LABEL

Instruction	Op Code	Op	Op	Op

SUMMARY OF INSTRUCTIONS

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BASIC INSTRUCTIONS

MNEMONIC	13	12	11	10	9				8	7	6				5	4	3				2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N	C	B-LABEL	N	C	C-LABEL	N	C						
ADD									LABEL			LABEL			LABEL								
ADDC					01-15 +1.s.d. in A				LABEL			LABEL					CST	LABEL					

MNEMONIC	OP	CD	1	0	2	1	0	2	1	0	2	1	0	2	1	0	2	1	0	2	1	0
ADD	10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MNEMONIC	13	12	11	10	9				8	7	6				5	4	3				2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N	C	B-LABEL	N	C	C-LABEL	N	C						
SUB									LABEL			LABEL			LABEL								
SUBC					01-15 +1.s.d. in A				LABEL			LABEL					CST	LABEL					

MNEMONIC	OP	CD	1	0	2	1	0	2	1	0	2	1	0	2	1	0	2	1	0	2	1	0
SUB	11		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MNEMONIC	13	12	11	10	9				8	7	6				5	4	3				2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N	C	B-LABEL	N	C	C-LABEL	N	C						
MUL									LABEL			LABEL			LABEL								
MUR					00-99 = shift right				LABEL			LABEL			LABEL								
MULC									LABEL			LABEL			LABEL								
MURC					00-99 = shift right				LABEL			LABEL					CST	LABEL					

MNEMONIC	OP	CD	1	0	2	1	0	2	1	0	2	1	0	2	1	0	2	1	0	2	1	0
MLT	12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MNEMONIC	13	12	11	10	9				8	7	6	5			4	3				2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C		
DIV					00-99 = shift left				LABEL				LABEL				LABEL					
DIVC					00-99 = shift left				LABEL				LABEL				LABEL					
															CST							

MNEMONIC	OP	CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DIV	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0	
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
ENP			0-8	00-15			FEED1		00-99	Softw.					LABEL			
ENN			start	of			FEED2		of	pilot								
ENPR			of	digits			OPEN1		lines	lamps								
ENNR			keys				OPEN2		feed									

MNEMONIC	OP	CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BNN	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MNEMONIC	13	12	11	10	9			8	7	6		5	4	3		2	1	0		
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
NOP																				

MNEMONIC	OP	CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
NOP	00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MNEMONIC	13	12	11	10	9	876					543			210							
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C	
PRN	Standard address									Total no. of fig.											
PRNP																					
PRNM		LABEL OF MASK																			

MNEMONIC	OP	CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WRN	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0	
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
FEED	Height CS1		Lines feed CS1		S Y N C S	Height CS2			Lines feed CS2				Lines feed FF1			L M feed FF2		

MNEMONIC	OP	CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PHF	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MINEMONIC	13	12	11	10	9			8	7	6			5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
E A																				
E A R																				
E A S																				
E A S R																				
P R A																				
P R A R																				
E A P																				
E A P R																				
E A T																				
E A T R																				

LINE	MONIC	OP	CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
WRA 32				1 to via keyb.	0=I/R/C inactive	1=I/R/C active	0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
				0=from DA	1=from I/R/C	0=no feed at I/R/C	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										
				0=from DA	1=from I/R/C	0=from DA	1=from I/R/C	0=16 highest	1=00-99 number of characters involved																										

MINEMONIC	13	12	11	10	9			8	7	6			5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
B T F																				

MINE MONIC	OP CD	X				Y				A				B				C			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
BTR	02	00-99 number of locations to be transferred				0	0	0	0	0	0	0	Address of lowest location to which transfer is taken place				Address of lowest location to which transfer is taken place				

MINEMONIC	13	12	11	10	9			8	7	6			5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
BRU																				
BRC																				

MINI-MONIC	OP. CD.	X			Y			A			B			C		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
BRC	20	Grand-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		ison keys	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0

MINEMONIC	13	12	11	10	9			8	7	6			5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
CME																				
CMU																				
CMG																				
CML																				
CMZ																				
CMEC																				
CMUC																				
CMGC																				
CMLC																				

NAME MINI-MON	OP	X					Y					A					B					C	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				
CMP	31	0: (A) > (B)		0: DA in B			0			0			0			DA					DA		1A
		1: (A) ≠ (B)		1: Constant			0-15			00-15								Constant					
		2: (A) > (B)		in B			of fig.			i.s.d. in A													
		3: (A) < (B)		comp.																			

MINEMONIC	13	12	11	10	9			8	7	6			5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
CLR																				
CLRS																				

MNE - MONIC	OP CD	X			Y			A			B			C		
CLR	23	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0
		Internal code of charact. wanted									Lowest DA			Highest DA		

MNE-MONIC	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N C	B-LABEL	N C	C-LABEL	N C
TFR									LABEL		LABEL			
TFRP			No of fig		L s.d. in B				L s.d. in C		LABEL		LABEL	
TFRC											LABEL		LABEL	
										CST		LABEL		

MNE - MONIC	OR CD	X			Y			A			B			C		
TRF	23	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0
		0-complete 1-partial			0-DA or IA in B 1-Constant in B			0-0...15 no. of fig. to be transf. 1-0...15 L.s.d. of B			0 00...15 L.s.d. of C			DA or IA DA or IA		

MNE-MONIC	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N C	B-LABEL	N C	C-LABEL	N C
MOD									LABEL		LABEL		LABEL	
MODS									LABEL		LABEL		LABEL	
MODT									NO if no modif.	CST	NO if no modif.	CST	NO if no modif.	CST

MNE - MONIC	OR CD	X			Y			A			B			C			
		1	0		2	1	0	3	1	0		2	1	0	3	1	0
MOD	01	0: add. 1: subtr. 2: transf.			0	1A to be modified			Factor			Factor			Factor		
999: no modification																	

MNE-MONIC	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N C	B-LABEL	N C	C-LABEL	N C
LBN			Add. code		S i g n				LABEL				High est pos. in C	LABEL
LBA													High est even pos. in C	

MNE - MONIC	OP CD	X			Y			A			B			C		
LOB	42	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0
		Additional code configuration, eg ETX (33)			0= no sign 1= sign as overpunch 2= sign as separate punching			01-80 = first buffer position			Address of highest buffer location			0= 00-15 = highest position in C		
					0									DA from which transfer takes place		
														00,02... 14 = highest even position in C		

MNE-MONIC	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N C	B-LABEL	N C	C-LABEL	N C
UBN			S		First buffer posit.				LABEL				High est pos. in C	LABEL
UBA			g		n								High est even pos. in C	

MNE - MONIC	OP CD	X			Y			A			B			C		
UDB	43	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0
		0= no sign 1= sign as overpunch 2= sign as separate punching			01-80 = first buffer position			Address of highest buffer location			0= 00-15 = highest position in C			DA to which transfer takes place		
					0									00,02... 14 = highest even position in C		

MLC - INSTRUCTIONS (P 353)

MNEMONIC	13	12	11	10	9				8	7	6				5	4	3				2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C			
RDA																							
RDL																							
NRA																							
NRD																							

MNE- MONIC	OP CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
MC1	50																				
		Breading and positioning at 1st free line				0		0		0		0		1-8: number of buffer locations involved							
		4 line reading positioning at 1st free line																			
		6 line reading positioning at upper line																			

MNEMONIC	13	12	11	10	9				8	7	6				5	4	3				2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C			
WRL																							
NWR																							
WFS																							

MNE- MONIC	OP CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
MCO	51																				
		Breading with line mark				0		0		0		0		1-8: number of buffer locations involved							
		2: no recording, no line mark																			
		4: mark stripe at full card																			

MNEMONIC	13	12	11	10	9				8	7	6		5	4	3		2	1	0	
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
BFS																				

MNE- MONIC	OP CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
BRC	20																				
		2: check on full page ledger card (P353)				0		0		0		0		0		0		0		0	

MLC - INSTRUCTIONS (P 354, P 358, P 359)

MNEMONIC	13	12	11	10	9				8	7	6				5	4	3				2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C			
RDAS																							
ROAD																							
RDLs																							
RDL0																							
NRDS																							
NRD0																							

MNE- MONIC	OP CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
MC1	50																				
		0: 0: desired number of lines the card is to be inserted				0		0		0		0		0		0		0		0	
		Bread front side, 0: 2: number of buffer locations required per card side																			
		Bread front and rear side																			
		Bread front side, pos at 1st free line																			
		Bread front and rear side, pos at 1st free line																			
		4 line reading (front side only)																			
		5: no reading (front and rear side)																			

MNEMONIC	13	12	11	10	9				8	7	6				5	4	3				2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C			
WRLS																							
WRLD																							
WLMS																							
WLMD																							
WFSS																							
NWRS																							

MNE- MONIC	OP CD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
MCO	51																				
		0: 0: no. of lines for card insertion				0		0		0		0		0		0		0		0	
		2: no write																			
		3: write front side - line counter																			
		4: write front and rear side																			
		5: write front and rear side, line counter																			
		6: write full card																			
		7: write full card																			

PUNCHED CARD / PAPER TAPE INSTRUCTIONS

MNEMONIC	13	12	11	10	9			8	7	6		5	4	3		2	1	0		
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
PCH	No of buffer locat.					Interface ch.			LABEL											
PWR																				

MNE. MONIC	OP CD	X		Y		A			B			C			
		1	0	2	3	4	5	6	7	8	9	10	11	12	
PTC	40	01 = 10 = number of buffer locations involved (card)		0	0 = 3 = interface channel		1 = 1st unit	Address of highest buffer location			0	0	0	0	0
		01 = 16 = number of buffer locations involved (tape)					8 = 2nd unit								

MNEMONIC	13	12	11	10	9				8	7	6		5	4	3		2	1	0	
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
CRD	No of buffer locat.					Interface ch.			LABEL											
PRD						1st or 2nd unit														

MNE. MONIC	OP CD.	X		Y		A			B			C			
		1	0	2	1	0	2	1	0	2	1	0	2	1	0
RTC	41	10 = number of buffer locations involved (card)		0	0 = 3 = interface channel		1 = 1st unit 2 = 2nd unit			Address of highest buffer location			0 0 0		
		01 = 16 = number of buffer locations involved (tape)													

MNEMONIC	13	12	11	10	9			8	7	6		5	4	3		2	1	0		
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
BPE																				

MNE. MONIC	OP	1	0	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BRC	20	3	-	-	-	Interface channel			1st unit	2nd unit	IA at malfunction indicated by yellow pilot lamp (paper end)			IA at malfunction indicated by red pilot lamp (transport error)			

LINE PRINTER INSTRUCTIONS

MNEMONIC	13	12	11	10	9			8	7	6		5	4	3		2	1	0		
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
LPN	Smb in non sign. pos.					Smb at the end of the d.p.			Total no. of fig. of DA			Label of DA			Label of Lowest buffer word					
LPNP																				
LPØ																				
LPØP																				
LPNM																				
LPØM						Label of Mask														

MNE.	MONIC	OP	X		Y		A		B		C	
			1	0	2	3	2	1	0	2	1	0
LDN	62	0 = no punch 1 = standard punch	Symbols in place of 1 = standard punch 2 = space	0	Symbols at the end of 0 = no. of space	No. of figures 0-15	Capacity (total no. of figures) 0-15	Lowest even pos. in the buffer DA (IC-section)	DA of num. data	Lowest buffer DA		
			2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 = 10 = 11 = 12 = 13 = 14 = 15 =		2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 = 10 = 11 = 12 = 13 = 14 = 15 =	2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 = 10 = 11 = 12 = 13 = 14 = 15 =	2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 = 10 = 11 = 12 = 13 = 14 = 15 =	2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 = 10 = 11 = 12 = 13 = 14 = 15 =	2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 = 10 = 11 = 12 = 13 = 14 = 15 =	2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 = 10 = 11 = 12 = 13 = 14 = 15 =	2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 = 10 = 11 = 12 = 13 = 14 = 15 =	2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 = 10 = 11 = 12 = 13 = 14 = 15 =
		2 = software punch 4 = over-timing	0 = zeros	Mask address								

MNEMONIC	13	12	11	10	9			8	7	6		5	4	3		2	1	0		
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	N	C	B-LABEL	I	N	C	C-LABEL	I	N	C
LSC						Stop char. 1			Stop char. 2			Label of Index Word			Label of word in buffer					
LSCT																				
LSØ																				
LSØT																				

MNE. MONIC	OP CD	X				Y				A				B				C											
		1	0	2	3	1	0	2	3	1	0	2	3	1	0	2	3	1	0										
CTR	03	0=no transf stop char. 1=with transf stop char. 4=overline				Stop character 1				Stop char. 2				Index Word Address				Lowest position of Index in rele- vant word				30-74 Highest even pos in print buffer				Highest address in print buffer			

MAGNETIC DISK INSTRUCTIONS

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N C	B-LABEL	I N C	C-LABEL	I	N	C	L
PLNE	Words per print head			In- ter- fa- ce	S e- q. no.				LABEL			Li- nes feed			S y- n- c r o	hei- ght	F orm

LINE MONIC CD	B		Y		A			B			C		
	1	8	2	1	8	2	1	8	2	1	8	2	1
PRL 63	00-08	Number of words per print head			Interface channel and device number			Highest address of print buff.			00-09	08	Form No. height
											feed	syn-	chr
											print-	chr	
											ing	chr	
											ing	chr	

[illegible]

LINE NO.	MONIC CD	Z			Y			A			B			C		
		1	0		2	1	0	2	1	0	2	1	0	2	1	0
BRC	20	3	-	-		Interface channel	ant no		-	-		JA at mal-function indicated by yellow pilot lamp (except full stacker)		JA at mal-function indicated by red pilot lamp		

MEMONIC	13	12	11	10	9			8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N	C	B-LABEL	I	N	C	A-LABEL	I	N
OPEN	File ident. LS- no. of + 2 num act. char- acters					Status: INPUT OUTPUT I/O					Access: SEQ RANDOM			Organiz- SEQ IDX SEQ DIRECT				

NINE - MONIC	OP CD.	X			Y				A			B			C					
		1	0		2	1	0	2	1	0	2	1	0	2	1	0				
52	4	1-5: number of active disk drives for this file			Address of header location in File Information Block				Status code 1: PUT 2: OUTPUT 3: I/O			Access code 1 : SEQ 2 : RANDOM			0 0 0 0			Address of symbolic key location		

MNEMONIC	1312	1110	9				876		543		210	
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	N C B-LABEL	N C C-LABEL	N C
CLOS				File identification (2 alpha + 2 numeric characters)					LOCK	—	—	—
									EQUATE	File descriptor	—	—

Mnemonic	OP	X			Y			A			B			C		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
52	5	0	Address of header word in File Information Block						0	0	0	0	0	0	0	0
	7	0							0	0	0	0	0	0	0	0
	6	0							0	0	0	0	0	0	0	0
File identification: a: alpha n: numeric Alpha characters in numeric representation																

MNEMONIC	13	12	11	10	9			8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	N ₀	Z ₂	Z ₁	A-LABEL	N	C	B-LABEL	N	C	C-LABEL	N	C		
READ	File identification (2 alpha + 2 numeric characters)							Symbolic key location		Jump address at End Of File or invalid key				Highest address of user's buffer				

WINE MONIC	OP CO.	X			Y			A			B			C		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
53	0	1	Address of header word in F14 Information Block			Address of symbolic key location			Jump address at End Of File or invalid key			Highest address of user's buffer				

SPECIAL ASSEMBLER INSTRUCTIONS

MNEMONIC	13	12	11	10	9				8	7	6		5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC			
WRTE																				
		</																		

MNE.	OP.	X			Y				A				B			C		
		1	0		2	1	0	3	2	1	0	3	2	1	0	3	2	1
	55	0		1	Address of header word in File Information Block				Address of symbolic key location				Jump address at End Of File or invalid key			Highest address of user's buffer		

MNEMONIC	13	12	11	10	9				8	7	6		5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC			
PRIM																				

MNE.	OP.	X			Y			A			B			C		
MONIC	CD	1	0	3	2	1	0	3	2	1	0	3	2	1	0	
	22	1	0	5	0	5	0	0	1	Address of header word = 2			Address of number is to be transferred			
												in File Information Block				

MNEMONIC	13	12	11	10	9				8	7	6		5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC			
RTN																				

MNEMONIC	13	12	11	10	9				8	7	6		5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC			
CRC																				

MNEMONIC	13	12	11	10	9				8	7	6		5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC			
SRC												Lsd in C						LABEL		

MNEMONIC	13	12	11	10	9				8	7	6		5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC			
BRS																				
		Par.							LABEL			LABEL								
										Param.				Param.			LABEL			

MNEMONIC	13	12	11	10	9				8	7	6		5	4	3			2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂	Z ₁	Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC			
BFSS																				

ASSEMBLER PSEUDO-INSTRUCTIONS

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
RSV	No of loc.																

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
BUFF	No of locat.																

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
NUM							Numeric constant of max. 15 digits										

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
COPY							Numeric constant of max 16 digits										

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
ALP	No of char.						Alphameric constant of max. 24 characters										

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
SAD							Alphameric constant of max. 6 char.						LABEL				CST

INDICATIONS TO THE ASSEMBLER

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
BEG										LABEL Normal Start			LABEL Power breakd.				Real store cap.

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
END																	

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
EQU										LABEL							
										CST							

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
OVR													LABEL				

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
SLC																	CST

MNEMONIC	13	12	11	10	9		8	7	6		5	4	3		2	1	0
	X ₁	X ₀	Y ₂	Y ₁	Y ₀	Z ₂ Z ₁ Z ₀	A-LABEL	I	NC	B-LABEL	I	NC	C-LABEL	I	NC		
PAGE																	

INTERNAL CODE P 350 - SERIES

XXX XXXX	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
↑	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
000 (0)	0	1	2	3	4	5	6	7	8	9	:	;	CR/	=	CR/	7
001 (1)	Space	%	"	◇	1)	%	&	'	(	)	*	+	,	-	.	/
010 (2)									ETB	Error						
011 (3)	NUL	P11	P12	ETX	P13	P14	P15	P16	P17							
100 (4)																
101 (5)																
110 (6)	P	Q	R	S	T	U	V	W	X	Y	Z	2)	3)	4)	~	Overl.
111 (7)	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O

1) Currency Symbol: \$, €, £, Fr, P_{ts}, Bs, ΔP

Country	2)	3)	4)
Argentina			
Chile			
Mexico	N		
Spain			
Venezuela			
Ireland			
United Kingdom	10	11	1/2
Belgium			
France	ç		
Luxemburg			
Switzerland			

Country	2)	3)	4)
Brazil			
Portugal	ç		
Denmark	Å	Æ	Ø
Norway			
Finland	Å	Ä	Ö
Sweden			
Italy	N _o		
Greece	ψ	Α	Σ

5) Minus sign as overpunch over zero

CONTENTS OF HARDWARE LOCATION 999

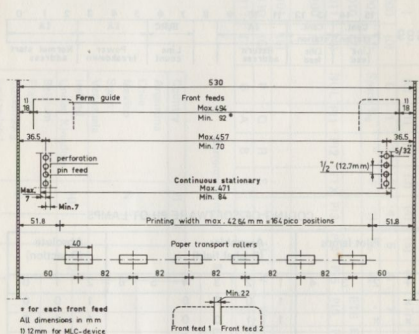
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Cont. station 1	Cont. station 2	IA						IR/RC		IA		IA			
Line feed	Line feed	Return address						Line count		Power breakdown		Normal start address			

999

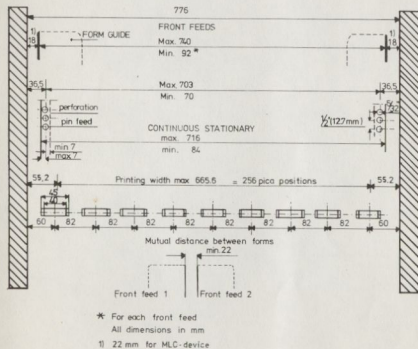
CODING OF SOFTWARE PILOT LAMPS

Pilot lamps				Assembler (B-label field)						Absolute (B-section)		
1	2	3	4	1	2	3	4	5	6	2	1	0
x				1	0	0	0			1	0	0
x	x			1	1	0	0			1	1	0
x	x	x		1	1	1	0			1	1	1
x	x	x	x	1	1	1	1			1	1	3
	x			0	1	0	0			0	1	0
	x	x		0	1	1	0			0	1	1
	x	x	x	0	1	1	1			0	1	3
		x		0	1	0	1			0	1	2
		x		0	0	1	0			0	0	1
		x	x	0	0	1	1			0	0	3
x		x		1	0	1	0			1	0	1
			x	0	0	0	1			0	0	2
x	x			1	1	0	1			1	1	2
x		x		1	0	1	1			1	0	3
x			x	1	0	0	1			1	0	2

PAPER HANDLING SYSTEM FOR MACHINES WITH SMALL CONSOLE



PAPER HANDLING SYSTEM FOR MACHINES WITH WIDE CONSOLE



Febr. 1972

8602 21 0314 11