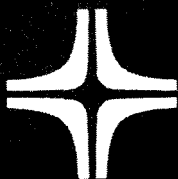


# Report Program Generator II (RPG II)




**OS/3**



**Summary**

SUMMARY OF RPG II CALCULATION OPERATIONS

Conditions		Factor 1		Operation		Factor 2		Result Field		Resulting Indicators	
9	17	18	27	28	32	33	42	43	48	54	59
				ADD							
				BEGSR							
				BITOF							
				BITON							
				CHAIN							
				COMP							
				DEBUG							
				DIV							
				DSPLY							
				ENDSR							
				EXCPT							
				EXIT							
				EXSR							
				FORCE							
				GOTO							
				LOKUP							
				MHZO							
				MHLZO							
				MLHZO							
				MLLZO							
				MOVE							
				MOVEA							
				MOVEL							
				MULT							
				MVR							
				NEXT							
				READ							
				RLABL							
				SETK							
				SETLL							
				SETOF							
				SETON							
				SHTDN							
				SQRT							
				SUB							
				TAG							
				TESTB							
				TESTN							
				TESTZ							
				TIME							
				ULABL							
				XFOOT							
				Z-ADD							
				Z-SUB							

 REQUIRED  
 OPTIONAL  
 BLANK

**RPG II INDICATORS**

**Indicator Definition**

Indicator		Permissible Entries
Type	Where Defined	
Record identification indicator	Input format specifications form columns 19-20	01-99, L1-L9, LR, and H1-H9
Field indicator	Input format specifications form columns 65-70	01-99, and H1-H9
Control level indicator	Input format specifications form columns 59-60	L1-L9
Resulting indicator	Calculation specifications form columns 54-59	01-99, L1-L9, LR, H0, H1-H9, OA-OG, U1-U8, KA-KN, KP-KW, and OV
Overflow indicator	File description specifications form columns 33-34	OA-OG, and OV
Internal indicators	Internally by RPG II	1P, L0, LR, MR, and H0
External indicator	Internally by RPG II	U1-U8
Function key indicator	Calculation specifications form columns 9-17 and output format specifications form columns 23-31	KA-KN and KP-KW

**Indicator Use**

Indicators		Permissible Entries
How Used	Where Specified	
File conditioning	File description specifications form columns 71-72	U1-U8
Field record relation	Input format specifications form columns 63-64	01-99, L1-L9, MR, H1-H9, and U1-U8
Control level	Calculation specifications form columns 7-8	L0, L1-L9, and LR
Calculation conditioning	Calculation specifications form columns 9-17	01-99, L0-L9, LR, MR, H0, H1-H9, OA-OG, OV, KA-KN, KP-KW, and U1-U8
Output conditioning	Output format specifications form columns 23-31	01-99, 1P, L0-L9, LR, MR, H0, H1-H9, OA-OG, KA-KN, KP-KW, OV, and U1-U8

## Setting Indicators On/Off

Indicator Type	When Set On	When Set Off
Record identification indicator	When the specified record is read and prior to the execution of total calculations.	After the current processing cycle is completed and before the next record is read during the next cycle.
Field indicator	When the condition the indicator represents is present in the specified field.	Prior to the next time the field is to be tested for the condition.
Control level indicator	When the value in the specified control field changes. (All lower level indicators are also set on.)	When the following detail cycle is completed.
Resulting indicator	When the calculation is performed and the condition that the indicator represents is present.	The next time the calculation is performed and the condition that the indicator represents is not present.
Overflow indicator	When a line is printed on the form on or past the forms overflow channel or if the form is spaced past that point.	After the following heading and detail lines are printed.
U1-U8 external indicators	By a //△SET△UPSI job control statement prior to the execution of your program or by a SETON operation within your program or when used as a resulting indicator in calculations.	By a SETOF operation within your program.
1P (first page) internal indicator	At the beginning of program execution.	Before the first input record is read
H0-H9 internal indicators	By an error condition (H0) or by a SETON operation within your program.	By a SETOF operation within your program.
L0 internal indicator	Always on.	Never
LR (last record) internal indicator	After the last record in the last file is processed or by a SETON operation in your program.	Never
MR (matching record) internal indicator	When all matching fields in a record of a secondary file match all the matching fields in the primary file.	When all total calculations, output, and overflow for the records have been executed.
KA-KN KP-KW function key indicator	When function key is pressed.	Before a read to a workstation file is issued or by a SETOF operation.

**\*ERROR Field Format**

BYTE	0	1-3	4-7	8-11
CONTENTS	ERROR CODE	STATUS BYTES	ADDRESS POINTER 1	ADDRESS POINTER 2

**Summary of Error Messages, \*ERROR Field Contents, and Operator Control Options**

Program Action (1)	Error Message That Indicates Condition That Set HO Indicator On	Contents of *ERROR Fields				Operator Control Options (3)
		Error Code		Address Pointer 1 (2)	Address Pointer 2 (2)	
		Graphic	Hexa-decimal			
C	RPG001 UNDEFINED RECORD TYPE	A	C1	-	IORB	1, 2, 3
C	RPG002 COLLATING SEQUENCE ERROR	B	C2	-	FILE DES	1, 2, 3
C	RPG003 RECORD SEQUENCE ERROR	C	C3	-	FILE DES	1, 2, 3
T	RPG004 INVALID ARRAY INDEX	D	C4	TLF	INDEX	0, 2, 3
T	RPG005 NEGATIVE SQUARE ROOT	E	C5	FIELD	-	0, 2, 3
T	RPG006 PUT (UPDATE) NO GET	F	C6	-	IORB	0, 2, 3
T	RPG007 FILE NOT OPENED	G	C7	-	-	2, 3
T	RPG008 TABLE SEQUENCE ERROR	H	C8	-	TLF	0, 2, 3
T	RPG009 TABLE FULL	I	C9	RECORD	TLF	0, 2, 3
T	RPG014 INVALID KEY FOR CHAINING	J	D1	KEY	IORB	2, 3
T	RPG036 SPECIAL FILE ERROR	K	D2	-	IORB	2, 3
T	RPG012 SAM ERROR	L	D3	-	IORB	2, 3
T	RPG013 READ ISSUED TO DEMAND FILE AT EOF	M	D4	-	FILE DES	0, 2, 3
C	RPG032 INVALID CHAINING REQUEST	N	D5	-	-	2, 3
-	RPG027 DISPLAY CONSOLE ERROR	O	D6	-	-	1, 2, 3
T	RPG034 CARD READ/PUNCH ERROR	P	D7	-	-	2, 3
T	RPG035 PRINTER ERROR	Q	D8	-	-	2, 3
C	RPG018 DAM NO RECORD FOUND	R	D9	KEY	IORB	1, 2, 3
T	RPG019 DAM OTHER	S	E2	KEY	IORB	2, 3
T	RPG020 ISAM ERROR	T	E3	-	IORB	2, 3
C	RPG021 ISAM NO RECORD FOUND	U	E4	KEY	IORB	1, 2, 3
T	RPG033 GETCS ERROR	V	E5	-	-	2, 3
C	RPG023 ISAM OVERFLOW AREA FULL	W	E6	KEY	IORB	0, 2, 3
T	RPG029 NON NUMERIC DATA INPUT TO NUMERIC FIELD	X	E7	FIELD	-	0, 2, 3
C	RPG025 ISAM DUPLICATE RECORD	Y	E8	KEY	IORB	0, 2, 3
T	RPG030 DIVIDE BY ZERO EXCEPTION	Z	E9	FIELD	-	0, 2, 3
T	RPG044 PROGRAM EXCEPTION ERROR	0	F0	-	-	2, 3
T	RPG042 UNRECOVERABLE TELECOMMUNICATIONS ERROR	1	F1	RCB	-	2, 3
T	RPG043 FILE ABORTED BY REMOTE TERMINAL OPERATOR	2	F2	RCB	-	2, 3
T	RPG041 CONSOLE I/O ERROR	3	F3	-	IORB	2, 3
T	RPG045 WORKSTATION ERROR	4	F4	-	-	2, 3

**NOTES:**

**(1) Program Action**

- C = program terminates after detail output; HO indicator can be set off unless it was set on during heading or detail output.
- T = program terminates immediately.

**(2) Address Pointers**

- FILE DES = address of file descriptor area.
- FIELD = address of field associated with the error condition.
- KEY = address of key field associated with the error condition.

**(2) (Cont.)**

- RECORD = address of the record associated with the error condition.
- RCB = address of remote control block.
- TLF = address of the table linkage field plus 16.
- IORB = address of input/output request block.

**(3) Operator Control Options**

- 0 = continue
- 1 = bypass
- 2 = controlled termination
- 3 = program terminates immediately

39401414214344  
903132  
262627  
141616171819 20 2122  
14171819

# INPUT FORMAT SPECIFICATIONS

<b>FORM TYPE</b>	6	7	14	15	16	17	18	19	20	21	24	25	26	27	28	31	32	33	34	35	38	39	40	41	42	43	44	47	48	51	52	53	58	59	60	61	62	63	64	65	66	67	68	69	70	71	74	75	80		
	FILE NAME		SEQUENCE 01-99 or AA-ZZ		O R A Z D		NUMBER 1 or N	O=OPTIONAL	RECORD IDENTIFYING INDICATOR OR **		POSITION		N=NOT C/Z/D	CHARACTER		POSITION		N=NOT C/Z/D	CHARACTER		POSITION		N=NOT C/Z/D	CHARACTER		STACKER SELECT DATA FORMAT P/B/L/R		FROM		TO		DECIMAL POSITIONS		FIELD NAME		CONTROL LEVEL L1-L9		MATCHING FIELDS OR CHAINING FIELDS		FIELD RECORD RELATION		PLUS		MINUS		ZERO OR BLANK		NOT USED		PROGRAM IDENTIFICATION	
	RECORD IDENTIFICATION										RECORD IDENTIFICATION CODES										FIELD LOCATION										FIELD DESCRIPTION																				

# CALCULATION SPECIFICATIONS

<b>FORM TYPE</b>	6	7	8	9	10	11	12	13	14	15	16	17	18	27	28	32	33	42	43	48	49	51	52	53	54	55	56	57	58	59	60	74	75	80			
	PROGRAM IDENTIFICATION		COMMENTS															CALCULATION										CONDITIONS									
	RESULTING INDICATORS		RESULT FIELD															INDICATORS										CONTROL LEVEL L0-L9/LR/SR									
	ARITHMETIC + - 0		NAME															AND										N=NOT N=NOT N=NOT									
COMPARE 1 > 2 1 < 2 1 = 2		FIELD LENGTH															AND										N=NOT N=NOT N=NOT										
LOOKUP (FACTOR 2) IS		DECIMAL POSITION H = HALF ADJUST															AND										N=NOT N=NOT N=NOT										
HIGH LOW EQUAL		OPERATION															AND										N=NOT N=NOT N=NOT										
FACTOR 1		FACTOR 2															AND										N=NOT N=NOT N=NOT										

67 73 74 75 76 77 78 79 80

67	73	74	75	76	77	78	79	80	
FILE NAME		NOT USED		A-L/N/O/Q-R/T-Z		R/T		NOT USED	
N/Y OR BLANK		A/B/E/M/S		SWITCHED		TRANSPARENCY		TYPE OF STATION CONFIGURATION	
NOT USED		PERMANENT ERROR INDICATOR		LAST FILE		WAIT TIME		L OR BLANK	
NOT USED		REMOTE TERMINAL		NOT USED		01-99/L1-L9/LR/H1-H9		NOT USED	
NOT USED		REMOTE DEVICE		TERMINAL NAME		PROGRAM IDENTIFICATION		FORM TYPE	

## TELECOMMUNICATIONS SPECIFICATIONS

## LINE COUNTER SPECIFICATIONS

PROGRAM IDENTIFICATION	LINE NO.	CH. NO.	LINE NO.	CH. NO.	LINE NO.	CH. NO.	LINE NO.	CH. NO.	LINE NO.	CH. NO.	LINE NO.	CH. NO.	LINE NO.	CH. NO.	LINE NO.	CH. NO.	LINE NO.	CH. NO.	FORM TYPE					
	1		2		3		4		5		6		7		8		9		10		11		12	
	FILE NAME																							

67 73 74 75 76 77 78 79 80

6	7	8	9	10	14	15	16	17	18	19	20	21	22	25	26	27	30	31	32	39	40	41	42	43	44	69	70	73	74	75	80
FORM TYPE	2/3/4 OR BLANK D OR BLANK 1 OR BLANK	OPERATOR CONTROL	NOT USED		1 OR BLANK	NOT USED	CURRENCY SIGN	NOT USED	D//J OR BLANK	NOT USED	SOR BLANK	NOT USED	1 OR BLANK	NOT USED		S//B OR BLANK	1 OR BLANK	SOR BLANK	FOR BLANK	NOT USED				A/S OR BLANK	PROGRAM IDENTIFICATION						
			ERROR ANALYSIS DUMP	GENERATE DEBUG CODE										ALTERNATE COLLATING SEQUENCE	SIGN HANDLING					FILE TRANSLATION	CCA NAME										
	COMPILATION MODE				INVERTED PRINT				FORMS ALIGNMENT		INDICATOR INITIALIZATION				SUBROUTINE																

## CONTROL CARD SPECIFICATIONS

## FILE EXTENSION SPECIFICATIONS

6	7	8	9	10	11	18	19	26	27	32	33	35	36	39	40	42	43	44	45	46	51	52	54	55	56	57	58	74	76	80
FORM TYPE	01-99 or AA-ZZ		C1-C9		FROM FILE NAME		NUMBER OF THE CHAINING FIELD		TO FILE NAME		TABLE OR ARRAY NAME		NUMBER OF ENTRIES PER TABLE OR ARRAY		P/B/L/R DATA FORMAT DECIMAL POSITIONS A/D SEQUENCE		P/B/L/R DATA FORMAT DECIMAL POSITIONS A/D SEQUENCE		ALTERNATING FORMAT		TABLE OR ARRAY NAME		LENGTH OF ENTRY		P/B/L/R DATA FORMAT DECIMAL POSITIONS A/D SEQUENCE		COMMENTS		PROGRAM IDENTIFICATION	



FORM TYPE		F	
FILE NAME	NOT USED		
FILE TYPE	I/O/C/U/D	NOT USED	
	P/S/R/C/D/T	NOT USED	
	A/D	BLOCK LENGTH	RECORD LENGTH
	F/V/D	FILE FORMAT	
END OF FILE	SEQUENCE		
FILE DESIGNATION	FILE TYPE		
FILE PROCESSING MODE	KEY OR RECORD ADDRESS FIELD LENGTH	R/L	
	RECORD ADDRESS TYPE	A/P/I/K/R	I/T/D/X/2
	OVERFLOW INDICATOR	OA-OG/OV	
	FILE ORGANIZATION	KEY FIELD STARTING LOCATION	KEY FIELD OVERFLOW STARTING LOCATION
EXTENSION OR LINE COUNTER CODE	E/L		
DEVICE	NOT USED		
CONTINUATION LINES	OPTION	K	
	ENTRY	S/N/E	
NUMBER OF BYTES IN MAIN STORAGE TO BE RESERVED FOR INDEX	KEY LENGTH	BLANK OR C	
	FILE ADDITION/UNORDERED LOAD	A/U OR BLANK	
CYLINDER OVERFLOW SPACE PERCENTAGE (X10)	FILE ADDITION/UNORDERED LOAD	R/U/N	
	NUMBER OF EXTENTS	U1-U8	
TAPE REMIND OPTION	NOT USED		
FILE CONDITIONS	PROGRAM IDENTIFICATION		

## FILE DESCRIPTION SPECIFICATIONS

## OUTPUT FORMAT SPECIFICATIONS

FORM TYPE	O	
	STACKER SELECT/FETCH OVERFLOW	
FILE NAME	TYPE H/D/T/E	
SPACE	BEFORE	AFTER
	AFTER	BEFORE
SKIP	BEFORE	AFTER
	AFTER	BEFORE
OUTPUT INDICATORS	AND	AND
	N=NOT	N=NOT
FIELD NAME	AUTO	
EDIT CODES	B=BLANK AFTER	
DATA FORMAT P/B/L/R	END POSITION IN OUTPUT RECORD	
NEGATIVE VALUE INDICATION	CR	CR
	NONE	NONE
COMMAS INSERTED	YES	YES
	NO	NO
	YES	NO
	NO	NO
ZERO BALANCE TO PRINT	YES	YES
	NO	NO
	YES	NO
	NO	NO
CODES	A	J
	B	K
	C	L
	D	M
ACTION	REMOVE PLUS SIGN	X
	EDIT DATE FIELD	Y
	ZERO	Z
	SUPPRESS	
PROGRAM IDENTIFICATION	NOT USED	

