

Section B: Character Sets with EBCDIC and Card-Punch Codes

60-CHARACTER SET

<u>Character</u>	<u>Card-Punch</u>	<u>8-Bit EBCDIC Code</u>	<u>Character</u>	<u>Card-Punch</u>	<u>8-Bit EBCDIC Code</u>
			0	0	1111 0000
			1	1	1111 0001
			2	2	1111 0010
			3	3	1111 0011
			4	4	1111 0100
			5	5	1111 0101
			6	6	1111 0110
			7	7	1111 0111
			8	8	1111 1000
			9	9	1111 1001
blank	no punches	0100 0000			
<	12-8-3	0100 1011			
(12-8-4 (12-8-6)	0100 1100			
{	12-8-5 (0-8-4)	0100 1101			
+	12-8-6 (12)	0100 1110			
	12-8-7 (NA)	0100 1111			
!	12 (NA)	0101 0000			
\$	11-8-3	0101 1011			
°	11-8-4	0101 1100			
)	11-8-5 (12-8-0)	0101 1101			
;	11-8-6	0101 1110			
~	11-8-7 (NA)	0101 1111			
11		0110 0000			
/	0-1	0110 0001			
.	0-8-3	0110 1011			
x	0-8-U (NA)	0110 1100			
_	0-8-5 (NA)	0110 1101			
>	0-8-6 (8-6)	0110 1110			
≦	0-8-7 (12-0)	0110 1111			
≧	8-2 (8-5)	0111 1010			
#	e-3 (NA)	0111 1011			
0	8-4 (NA)	0111 1100			
1	8-5 (8-4)	0111 1101			
2	8-6 (8-3)	0111 1110			
3	12-1	1100 0001			
B	12-2	1100 0010			
C	12-3	1100 0011			
D	12-4	1100 0100			
E	12-5	1100 0101			
F	12-6	1100 0110			
G	12-7	1100 0111			
H	12-8	1100 1000			
I	12-9	1100 1001			
J	11-1	1101 0001			
K	11-2	1101 0010			
L	11-3	1101 0011			
M	11-4	1101 0100			
N	11-5	1101 0101			
O	11-6	1101 0110			
P	11-7	1101 0111			
Q	11-8	1101 1000			
R	11-9	1101 1001			
S	0-2	1110 0010			
T	0-3	1110 0011			
U	0-4	1110 0100			
V	0-5	1110 0101			
W	0-6	1110 0110			
X	0-7	1110 0111			
Y	0-8	1110 1000			
Z	0-9	1110 1001			

<u>Composite Symbols</u>	<u>Card-Punch</u>
<=	12-8-4, 8-6 (12-8-6, 8-3)
	12-13-7, 12-8-7 (NA)
'	11-8-4, 11-8-4
-<	11-8-7, 12-8-4 (NA)
->	11-8-7, 0-8-6 (NA)
-=	11-8-7, 8-6 (NA)
>=	0-8-6, 8-6 (8-6, 8-3)
/*	0-1, 11-8-4
*/	11-8-Y, 0-1
->	11, 0-8-6 (11, 8-6)

The card-punch codes given in brackets are BCDIC codes that differ from the corresponding EBCDIC codes.

NA indicates that the symbol has no representation in BCDIC. BCDIC codes can be used in the PL/I source program provided that the CHARSET(BCD) compiler option is specified. No BCDIC 8-bit codes are given here since, when the CHARSET(BCD) option is specified, all BCDIC codes in the source program are converted by the compiler into EBCDIC.

Although the full PL/I 60-character set is not available in BCDIC, all the 48-character set (see next page) is available, so if CHARSET(48,BCD) is specified, all PL/I operations can be performed.

48-CHARACTER SET

Character	Card-Punch	8-Bit EBCDIC Code	Composite Symbols	card Punch	60-Char Set Equivalent
blank	no punches	0100 0000			
.	12-8-3	0100 1011	..	12-B-3, 12-8-3	:
(12-B-5 (O-E-9)	0100 1101	LE	11-3, 12-5	<=
+	12-8-6 (12)	0100 1110	CAT	12-3, 12-1, o-3	
\$	11-8-3	0101 1011	**	11-S-4, 11-B-Y	**
'	11-8-U	0101 1100	NL	11-5, 11-3	-<
)	11-8-S (12-8-4)	0101 1101	NG	11-5, 12-7	->
/	11	0110 0000	NE	11-5, 12-5	=
,	o-1	0110 0001	//	o-1, o-1	%
'	o-a-3	0110 1011	,.	o-8-3, 12-8-3	
=	8-5 (8-P)	0111 1101	AND	12-1, 11-5, 12-4	&
%	8-6 (8-3)	0111 1110	GE	12-7, 12-5	>=
B	12-1	1100 0001	GT	12-7, o-3	>
C	12-2	1100 0010	LT	11-3, o-3	<
Q	12-3	1100 0011	NOT	11-5, 11-6, o-3	~
o	12-4	1100 0100	OR	11-6, 11-9	
o	12-5	1100 0101	/*	o-1, 11-8-Y	/*
o	.2-6	1100 0110	's	o-1, 11-8-Y	's
o	.2-7	1100 0111	PT	11-7, o-3	->
o	12-8	1100 1000			
I	12-9	1100 1001			
J	11-1	1101 0001			
K	11-2	1101 0010			
L	11-3	1101 0011			
M	11-4	1101 0100			
N	11-5	1101 0101			
O	11-6	1101 0110			
P	11-7	1101 0111			
Q	11-8	1101 1000			
R	11-9	1101 1001			
S	o-2	1110 0010			
T	o-3	1110 0011			
U	0-U	1110 0100			
V	0-5	1110 0101			
W	0-6	1110 0110			
X	o-7	1110 0111			
Y	o-8	1110 1000			
Z	o-9	1110 1001			
0	0	1111 0000			
1	1	1111 0001			
2		1111 0010			
3		1111 0011			
4	4	1111 0100			
5	5	1111 0101			
6	6	1111 0110			
7	7	1111 0111			
8	8	1111 1000			
9	9	1111 1001			

When using the 48-character set, the following rules must be observed:

1. The two periods that replace the colon must be immediately preceded by a blank if the preceding character is a period.
2. The two slashes that replace the percent symbol must be immediately preceded by a blank if the preceding character is an asterisk. OR immediately followed by a blank if the following character is a" asterisk.
3. The sequence "comma period" represents a semicolon except when it occurs in a comment, a character string. OR a picture specification OR when it is immediately followed by a digit.
4. If CHARSET(48) is specified, 60-character set Symbols may be freely intermixed with US-character set symbols and will be accepted by the compiler as valid input.
5. 48-character set 'reserved' words (e.g., GT, LE, CAT, etc.,) must be preceded and followed by a blank OR a comment.
6. "B-character Bet symbols represent their LO-character set equivalents only when they do NOT occur in a comment, a character string, OR a picture specification.

A record containing part or all of a 48-character set reserved word must be 3 characters or more in length.

The card-punch codes given in brackets are BCDIC codas that differ from the corresponding EBCDIC codes. BCDIC codes can be used in the PL/I source program provided that the CHARSET(BCD) compiler option is specified. No BCDIC 8-bit codes are given here since, when the CHARSET(BCD) option is specified, all BCDIC codes in the source program are converted by the compiler into EBCDIC.