

Section 5

HP PCL Cursor Position Commands

The IntelliBar prints with an active printing position typically referred to as the cursor position. You can use several commands to move the cursor for customized applications.*

- Cursor position commands deal with the following features.
- Absolute/relative position
- Cursor addressing units
- Horizontal control
- Vertical control
- Half-line feed
- Line feed
- Line termination
- Push/pop

In this section, cursor position commands are listed by subsection. The name of the command is followed by the escape sequence, its decimal and hex formats, and a description of how to use the command.

ABSOLUTE/ RELATIVE POSITION

You can specify either absolute or relative cursor motion to position the cursor. Absolute motion specifies movement to a physical position from the left edge of the top margin (position 0,0). Relative motion specifies the distance to move from the current cursor position. Figure 5-1 shows the relationships of cursor movement.

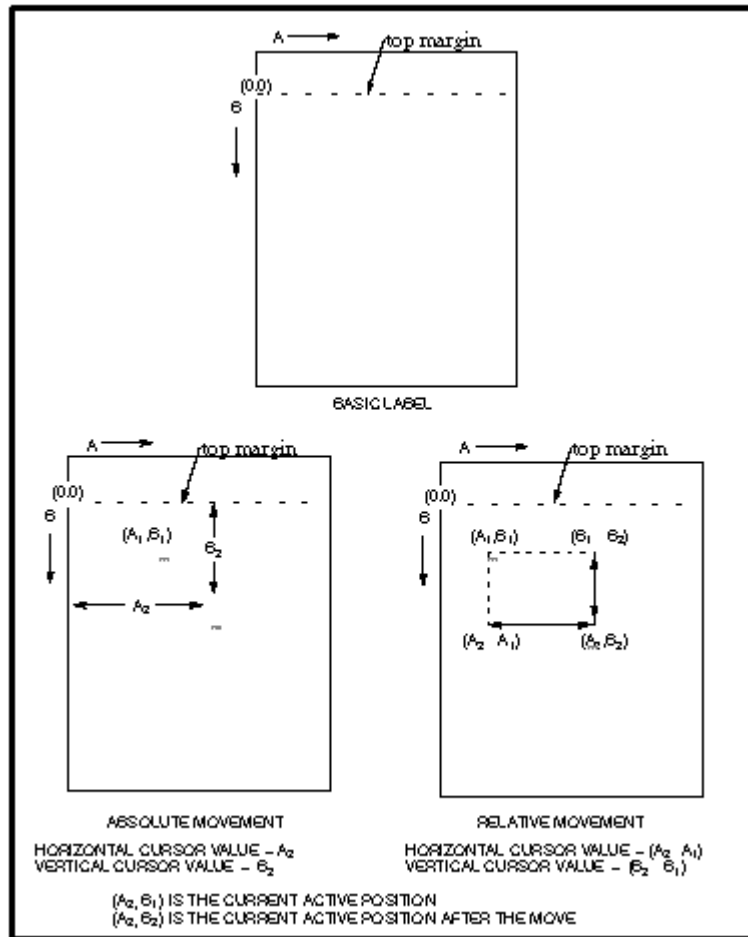


Figure 5-1 Cursor Positioning

CURSOR ADDRESSING UNITS

All position commands are expressed in PCL coordinate system units on an x-y axis. The x-axis units can be dots, decipoints, or columns. The y-axis units can be dots, decipoints, or rows.

The dot (or PCL typographic point) represents the smallest printable point with a size equal to 1/300 inch. Printer resolution refers to the number of dots per inch.

The decipoint equals 1/720 inch. It is one-tenth of a PCL typographic point.

Column width or distance between consecutive characters is expressed by the current horizontal motion index (HMI). Row values (the distance between the rows or the lines) are given through the current vertical motion index (VMI) or lines per inch (lpi).

HORIZONTAL CONTROL (COLUMNS)

ESC &a#C

Decimal: 027 038 097 # 067

Hex: 1B 26 61 # 43

#: number of columns

Use this horizontal control command to move the current horizontal cursor (or active print position) to a new column position on the current line.

The column width is defined by the current HMI value. If you specify a positive value (using a plus sign (+)) in the value field (#), the new position will be to the right of the current cursor position. If you specify a negative value (using a minus sign (–)) in the value field (#), the new position will be to the left of the current cursor position. By not specifying a sign, you obtain an absolute distance that is referenced from the left edge of the addressable print area.

The printer recognizes the first column in a line as column 0. The printer ignores margins when this escape sequence is used, so you can set the cursor position to any point along the current line using this sequence.

If you specify a location outside of the addressable page area, the cursor moves to the edge of the addressable page area.

You can specify a value to four decimal places.

HORIZONTAL CONTROL (DECIPOINTS)

ESC &a#H

Decimal: 027 038 097 # 072

Hex: 1B 26 61 # 48

#: number of decipoints (1/720 inch).

Use this horizontal control command, or escape sequence, to move the current horizontal cursor (or active print position) to a new position on the current line.

If you specify a positive value (using a plus sign (+)) in the value field (#), the new position will be to the right of the current cursor position. If you specify a negative value (using a minus sign (–)) in the value field (#), the new position will be to the left of the current cursor position. By not specifying a sign, you obtain an absolute distance that is referenced from the left edge of the addressable print area. The extreme left position is 0 and the extreme right position is the right edge of the addressable print area.

If you specify a location outside of the addressable page area, the cursor will move to the edge of the addressable page area.

You can specify a value to two decimal places.

HORIZONTAL CONTROL (DOTS)

ESC *p#X

Decimal: 027 042 112 # 088

Hex: 1B 2A 70 # 58

#: number of dots

Use this horizontal control command to move the current horizontal cursor (or active print position) to a new position on the current line.

If you specify a positive value (using a plus sign (+)) in the value field (#), the new position will be to the right of the current cursor position. If you specify a negative value (using a minus sign (-)) in the value field (#), the new position will be to the left of the current cursor position. By not specifying a sign, you obtain an absolute distance that is referenced from the left edge of the addressable print area. The extreme left position is 0 and the extreme right position is the right edge of the addressable print area.

If you specify a location outside of the addressable page area, the cursor will move to the edge of the addressable page area.

HORIZONTAL CONTROL (CONTROL CODES)

You can also use the four control codes described below to position the cursor horizontally on the current line.

CR – Carriage Return

The CR control code moves the cursor to the left margin of the current line. Its use is affected by the line termination command (explained later in this section).

SP – Space

The SP control code moves the cursor one column position to the right. You can define space as a printable character or a control code. When used with proportionally spaced fonts, the SP control code moves the cursor by the current HMI value. As a printable character, however, the cursor moves the width of a character. When used with fixed fonts, cursor movement is according to the HMI value, regardless of how space is used.).

BS – Backspace

The BS control code moves the cursor to the left a distance that is equal to the width of last printed character or space. No movement occurs if the cursor is already at the left margin.).

The backspace distance equals the HMI value when used with fixed pitch fonts.

When used with proportionally-spaced fonts, the backspace centers the overstriking character on the character being overstruck. After printing the overstrike character the cursor position will be at the same position before the backspace. Each movement back equals the distance of the last symbol or space. If the cursor is on the left margin, no movement occurs.

HT – Horizontal Tab

The HT control code moves the cursor to the next tab stop on the current line. Tab stops start on the left margin and occur at every eighth column to the right edge of the addressable print area. If the right margin is crossed by a new tab request, the new value is set at the right margin. When the HMI value is 0, the command is ignored.).

VERTICAL CONTROL (ROWS)

ESC &a#R

Decimal: 027 038 097 # 082

Hex: 1B 26 61 # 52

#: number of rows

Use this vertical control command to move the current vertical cursor (or active print position) along the current column position on a new line.

If you specify a positive value (using a plus sign (+)) in the value field (#), the new position will be down from the current cursor position. If you specify a negative value (using a minus sign (-)) in the value field (#), the new position will be above the current cursor position. By not specifying a sign, you obtain an absolute distance that is referenced from the top margin of the addressable print area.

If you specify an absolute or negative relative value outside of the addressable page area, the cursor will move to the edge of the addressable page area. You can specify a positive relative value to move the cursor down and off the current page. You can move the cursor into the perforation region because this command allows the printer to ignore the perforation skip mode. The printer, however, will only advance the cursor to the top of form of the page following the next page (thus, form feeding a blank page).

You can specify a value to four decimal places.

VERTICAL CONTROL (DECIPOINTS)

ESC &a#V

Decimal: 027 038 097 # 086

Hex: 1B 26 61 # 56

#: number of decipoints (1/720 inch)

Use this vertical control command to move the current vertical cursor (or active print position) along the y-axis.

If you specify a positive value (using a plus sign (+)) in the value field (#), the new position will be down from the current cursor position. If you specify a negative value (using a minus sign (-)) in the value field (#), the new position will be above the current cursor position. By not specifying a sign, you obtain an absolute distance that is referenced from the top margin of the addressable print area. The uppermost position is the top margin with a value of 0. The lowermost position is the bottom of the addressable print area. If you specify an absolute or negative relative value outside of the addressable page area, the cursor will move to the edge of the addressable page area.

You can specify a value to two decimal places.

VERTICAL CONTROL (DOTS))

ESC *p#Y

Decimal: 027 042 112 #...# 089

Hex: 1B 2A 70 #...# 59

#: number of dots.

Use this vertical control command to move the current vertical cursor (or active print position) to a new position along the y-axis.

If you specify a positive value (using a plus sign (+)) in the value field (#), the new position will be down from the current cursor position. If you specify a negative value (using a minus sign (-)) in the value field (#), the new position will be above the current cursor position. By not specifying a sign, you obtain an absolute distance that is referenced from the top margin of the addressable print area. The uppermost position is the top margin with a value of 0. The lowermost position is the bottom of the addressable print area. If you specify an absolute or negative relative value outside of the addressable page area, the cursor will move to the edge of the addressable page area.

HALF-LINE FEED)

ESC =
Decimal: 027 061
Hex: 1B 3D

Use the half-line feed command to move the cursor down one-half line feed to the same character position. The distance is one-half of the current VMI or line spacing setting.

VERTICAL CONTROL (CONTROL CODES).

You can use two control codes, described below, to position the cursor vertically.

LF – Line Feed

The LF control code moves the cursor to the same horizontal position on the next line. The space between the lines is set by the last VMI or line spacing setting. The line termination command affects the use of this control code.).

FF – Form Feed

The FF control code moves the cursor to the same horizontal position at the top of the text area on the next page. The line termination command affects the use of this control code.).

LINE TERMINATION).

ESC &k#G
Decimal: 027 038 107 # 071
Hex: 1B 26 6B # 47

#: 0 = CR=>CR; LF=>LF; FF=>FF
1 = CR=>CR-LF; LF=>LF; FF=>FF
2 = CR=>CR; LF=>CR-LF; FF=>CR-FF
3 = CR=>CR-LF; LF=>CR-LF; FF=>CR-FF

Use the line termination command to control the printer's interpretation of the CR, LF, and FF control codes.

PUSH/POP CONTROL).

ESC &f#S

Decimal: 027 038 102 # 083

Hex: 1B 26 66 # 53

#: 0 = push (store cursor position)

1 = pop (recall cursor position)

Use the push/pop command to store or recall the cursor position. Using the value 0 pushes the cursor position onto the first in last out (FILO) stack while keeping the current cursor position. Using the value 1 pops the cursor off the stack, restoring it as the current cursor position.

You can push up to 20 positions. Any more than 20 are ignored. If you pop more positions than you pushed, the command is ignored. If you reset the printer, the current cursor position is placed on the top of the stack and all other pushed are lost.

If a position is outside of the addressable print area, the cursor is positioned at the edge of the addressable print area.

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