Changing IQ plus® Series Format Strings To Print Bar Code Labels

It's a fact, the demand to link scale systems to bar code printers is growing at an estimated rate of 15% per year. To capitalize on these growth opportunities, I'm going to discuss how to change the format in the IQ plus® 510 and 710 series digital weight indicators to work with Datamax® printers by creating a simple bar code label.

Getting Started

Before beginning, there are a few steps you need to take. Always have the manuals for both the indicator and printer on hand. Then, make sure your indicator is in setup mode by using the config switch. Finally, since IQ plus indicators accept the ASCII value in decimal format, enter all characters using the values under the "DEC" heading in the chart titled "ASCII Character Chart," located in the back of the indicator manual.

Any formatting information sent to these printers must be preceded by the ASCII STX and L (decimal characters "02" and "76") label formatting commands. These commands prepare the printers to receive the formatting data that will follow. The next command is the termination-of-sequence/new line command, <NL>. This command notifies the printer of the end of the formatting commands and the beginning of the next field. It is used to terminate each field. When all of these commands are placed together, the first sequence appears (in ASCII characters) as:

STXL<NL>

Notice the <NL> command is in brackets (<=60, >=62). Be sure to place these brackets around any commands that are specific to the IQ plus series indicators (a list should appear in your manual).

Creating A Label

Each area of print on the label is created by a field that consists of a 15-byte header followed by the actual data you want to print. I've broken the 15-byte header into eight parts, with each part containing separate information. The field for the "Gross Weight" line on the sample ticket is:

1 1 1 1 000 0175 0050 GROSS WEIGHT <G> <NL>
a b c d eee ffff gggg hhhhhhhhhhhh <G> <NL>

a — Field rotation
1 = 0 degrees   2 = 90 degrees
3 = 180 degrees   4 = 270 degrees

b –– Font selection
Any valid font character or bar code selection (check back of printer manual for list of each)

c — Horizontal multiplier for fonts
Wide bar width for bar codes

d — Vertical multiplier for formats
Narrow bar width for bar codes (NOTE: Bar code width/height ratios vary with each bar code. Please consult the printer manual for the particular bar code ratio you need to use.)

eee – Always 000 for human readable fonts
Bar code height must be three digits, 050 = 1/2" high

ffff — Row address/distance from bottom
Must be four digits – 0050 = 1/2" up

gggg — Column address/distance from left
Must be four digits, 0050 = 1/2" over

hhh… — Data to be printed
Actual text, such as GROSS WEIGHT in the example, or format commands for information such as gross weight, <G>; net weight, <N>; time, <TI>; date, <DA>; etc.

<NL> ––End of field

Although the 15-byte header field is broken into eight different parts, there are *no* spaces between each part. Spaces are only allowed in the data to be printed. Note that every digit in the string, including each individual bracket,

is entered as the ASCII value in decimal format. The ASCII values in decimal format for the "GROSS WEIGHT" string are:

STX L   <   N   L   >
02 76 60 78 76 62

49 49 49 49 48 48 48 48 49 55 53 48 48 53 48
1 1 1 1 0 0 0 0 1 7 5 0 0 5 0

71 82 79 83 83 32 87 69 73 71 72 84 60 71 62 60 78 76 62 69
G R O S S ˄ W E I G H T < G > < N L > E
              space

After you enter all the necessary fields, the final <NL> command must be followed by the command E (decimal number "69"). This command signals the end of a print string. No information after the E will be acknowledged by the printer.

Helpful Tips

The IQ plus 510 and 710 indicators will accept up to 600 characters with the header. However, you may need to conserve space when formatting complicated labels. When custom formatting, you may need many spaces to appear on the label. In a long series of spaces, the command <SPx> is very helpful. "SP" signals spaces, and the "x" represents any number. For example, if you need 14 spaces, <SP14> enters 14 spaces while using far fewer characters than entering the decimal character "32" for each space.

Well, I hope these tips make formatting labels a little easier. And remember, if you're still having trouble, our staff at Rice Lake is just a phone call away!

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