

## Changing Print Format Strings from the Front Panel of the IQ plus® 800/810 Using Version 3.0 Software

In this issue, we'll discuss how to change print format strings from the front panel of the IQ plus® 800/810 indicators. The most efficient way to modify print format data is with a computer or keyboard connected to the indicator's EDP serial port. However, you may not always have access to this equipment, so we've made it possible to make changes from the front panel of the indicator when necessary. Specifically, we'll detail the process on the Prodigy, Prodigy Plus, Allegro, and the new TH-40 printers.

### THE BASICS

The 800/810 was designed with versatility in mind and interfaces to a wide range of printers. To accommodate the Prodigy, Prodigy Plus, Allegro, and TH-40, the print string must be in a format that includes formatting commands. The print string initially installed in the 800/810 (the default string) will not result in a label being printed. To print the installed string, you must change it to the correct format.

### Printer Format Menu

The following flow chart shows the printer format menu (P FORMT) you will work through when changing the print format strings. The figures to the right of the chart show the indicator screen on each level with default characters displayed.

At this level, you can **View, Add Spaces, or Delete** only.

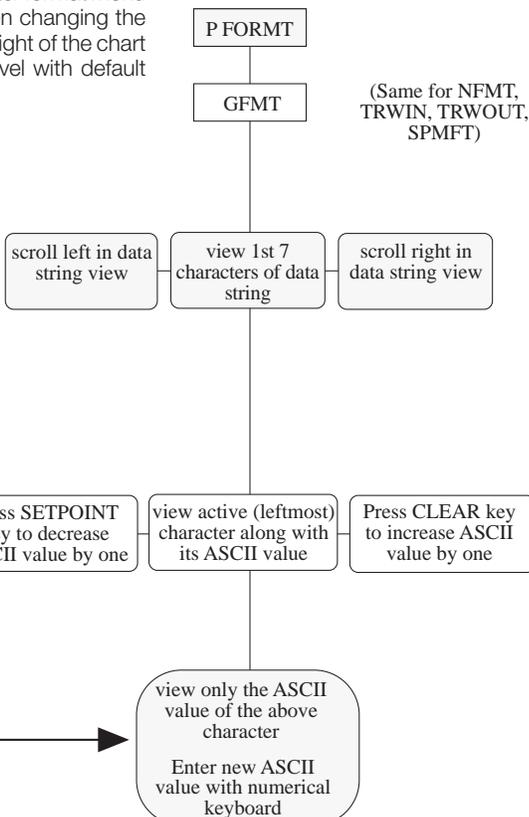
The leftmost character displayed is active and can be modified as follows:

Press decimal point key (.) to delete the leftmost character.

Press enter key (ENTER) to insert space before the leftmost character.

At this level, the active character can be **Changed** by incrementing or decrementing its displayed ASCII value with the side arrow keys: SETPOINT (-); CLEAR (+).

At this level, the active character can be **Replaced** by keying in a new ASCII value with the keypad.



### Indicator Display

SCALE <

S : 03

03

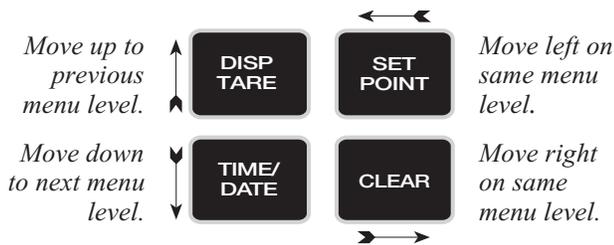
When working from the front panel, changing the print format strings for these printers is very similar. Regardless of which printer you are working with, there are several steps you should take before changing the print string in the indicator. First, it is very helpful if you have the manuals for both the indicator and the specific printer you are using. In the Prodigy, Prodigy Plus, and TH-40 manuals, the section to refer to is "Defining and Printing a Label." For the Allegro, the section to refer to is "Creating Labels Using Programming Commands."

Before beginning, make sure your 800/810 is in setup mode by using the config switch behind the front panel. If the indicator is in operating mode, no changes can be made to the print string.

It is also important to note that the 800/810 indicators accept the ASCII value in decimal format. In the back of the 800/810 manual, there is a chart titled "ASCII Character Chart." Enter all characters into the 800/810 using the values under the "DEC" heading, and the printer will receive the correct information.

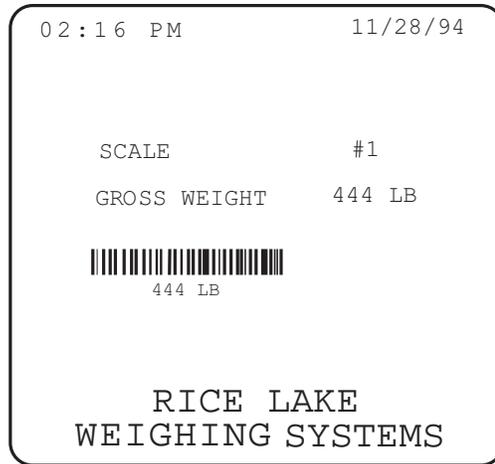
**NAVIGATING ON AN IQ PLUS 800/810**

To change the print format string, it is necessary for the user to maneuver through the indicator with four front-panel keys (shown below) that become directional keys in the setup mode. Press SET POINT and CLEAR to scroll left and right (horizontally) on the same level. Press DISP TARE and TIME/DATE to move up and down (vertically) to different menu levels.



**FORMATTING A PRINT STRING**

To make formatting the print string as easy as possible, we'll take you through formatting a label. As an example, we'll format the following label.



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 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 is as follows (in ASCII characters):

```
STXL<NL>
```

Notice the <NL> command is in brackets (<=60, >=62). These brackets should be placed around any format commands that are specific to the 800/810. These commands include:

- G — Gross weight / active channel
- G1 — Gross weight / scale #1
- G2 — Gross weight / scale #2
- G3 — Gross weight / scale #3
- G4 — Gross weight / scale #4
- G0 — Gross weight / total
- N — Net weight / active channel
- N1 — Net weight / scale #1
- N2 — Net weight / scale #2
- N3 — Net weight / scale #3
- N4 — Net weight / scale #4
- N0 — Net weight / total
- T — Tare weight / active channel
- T1 — Tare weight / scale #1
- T2 — Tare weight / scale #2
- T3 — Tare weight / scale #3
- T4 — Tare weight / scale #4
- T0 — Tare weight / total

- A —Accum for current channel
- A1 —Accum for scale #1
- A2 —Accum for scale #2
- A3 —Accum for scale #3
- A4 —Accum for scale #4
- A0 —Total accum
  
- TI —Time only
- DA —Date only
- TD —Time and date
- S —Scale number
- ID —ID number
- CN —Consecutive number
  
- NLx —x number of terminating sequences (<CR> or <CR/LF>)\*
- SPx —x number of spaces\*
- SU\*\* —Toggle weight data normal format and no format\*\*

\* If the number (x) is missing 1 is assumed.

\*\* After receiving this command the IQ plus® 800/810 will send all succeeding weight data unformatted. Unformatted means no leading spaces, no decimal place, and no trailing characters. The next SU command will toggle back to normal weight data format with leading spaces and the decimal point.

The list of commands differ in the Truck and Setpoint modes, so be sure to consult your manual as to which commands are applicable.

Each area of print on the label is created by a field which consists of a 15-byte header followed by the actual data you want to print. We'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 and an explanation of each part is as follows:

```
1 1 1 1 000 0175 0050 GROSS WEIGHT<G> <NL>
a b c d eee ffff gggg hhhhhhhhhhhhhhhhh <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 4 digits - 0050=1/2" up
  
- gggg —Column address/Distance from left - must be 4 digits - 0050=1/2" over
  
- hh... —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 field header is broken into eight different parts, there are *no* spaces between each part. A print string with incorrect spacing will not print. 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 as the flow chart on page one describes. The ASCII values in decimal format for the "GROSS WEIGHT" string are:

```
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

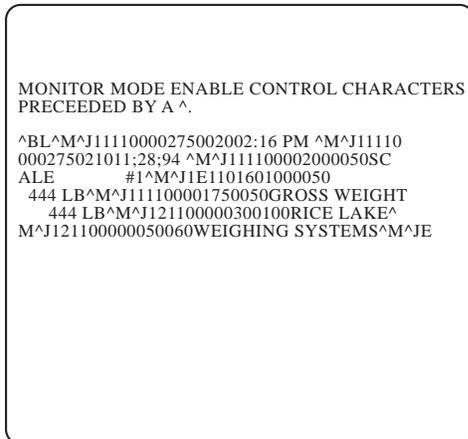
71 82 79 83 83 32 87 69 73 71 72 84 60 71 62 60 78 76 62
G R O S S \ W E I G H T < G > < N L >
           space
```

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.

## MONITOR MODE

Because each print field requires a 15-byte header, it is very easy to omit numbers accidentally and keep the string from printing. You may also omit necessary commands and make other mistakes in formatting. To help you find such problems, the printer has a monitor mode available. To access this mode, depress the feed button as you turn-on the printer. The printer will perform a self-test and print two labels with diagnostic information about the printer. Wait for these labels to print. Then you may push the PRINT button on the indicator to print the information received by the printer each time the PRINT button is pushed. Because the printer receives ASCII characters, the label will show ASCII characters.

All spaces are included on the monitor mode label. All formatting commands are preceded by a “^” followed by another character that is the control code equivalent to the ASCII character. For example, the ASCII STX command prints as “^B,” and “^M^J” is <NL>. The “ASCII Character Chart” lists these equivalents. For our example, the monitor mode label will look like the following label.



The monitor mode label allows you to count the number of bytes in the field header, check for the required format commands and pinpoint any other problems in the print string.

## HELPFUL HINTS

Because the 800/810 accepts no more than 300 characters, you may need to conserve space when formatting complicated tickets. 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. If you need 14 spaces, <SP14> enters 14 spaces while using far less characters than entering the decimal character “32” for each space.

The 800/810 display cannot correctly show all the ASCII characters. For example, the STX character with its decimal equivalent would look like the following display:



Although what appears on the indicator display is not “STX,” the decimal character “2” is correct, and the printer will send the appropriate STX ASCII character to the printer. If there is a question as to the correctness of a character, always check the decimal character in the 800/810.