IQ plus® 510/710 Digital Weight Indicators

Version 1.4 Software

Addendum to the IQ plus 510 and 710 Installation Manuals

This addendum to the IQ plus 510 and 710 *Installation Manuals* describes the following capabilities added in Version 1.4 software:

- Display resolution enhanced to 100000 divisions.
- HDRFMT ticket header print format added. Contents of the HDRFMT format can be inserted into any other ticket format using the <AE> formatting command.
- Threshold and sensitivity parameters added for improved digital filtering.
- DATESET and TIMESET parameters added to the IQ plus 510 PROGRM menu to allow time and date setting from the front panel when the indicator is in setup mode.

Display Resolution

Enhanced display resolution allows specification of up to 100 000 grads on the GRADS parameter (CONFIG menu) and on the GRADS EDP command.

HDRFMT Ticket Format

A new format, HDRFMT, allows specification of up to 300 characters of ticket header information for use on the other tickets. The HDRFMT ticket format can be configured using the PFORMT menu, the HDRFMT EDP command, or the Revolution™ Scaleware configuration utility. The default HDRFMT format is shown below:

```
COMPANY NAME<NL>
STREET ADDRESS<NL>
CITY, ST   ZIP<NL2>
```

The contents of the HDRFMT format can be inserted into any other ticket format using the <AE> formatting command.

For example, to include company address information in all ticket formats, you can specify the company address information in the HDRFMT ticket format, then substitute the <AE> command for the address in the other ticket formats:

```
HDRFMT=MOE'S DUMP<NL>2356 EAST
HIGHWAY ROAD<NL>SMALLTOWN<NL2>

GFMT=<AE><G> GROSS<NL>

NFMT=<AE>GROSS<G><NL>TARE<SP><T>
<NL>NET<SP2><N><NL>
```

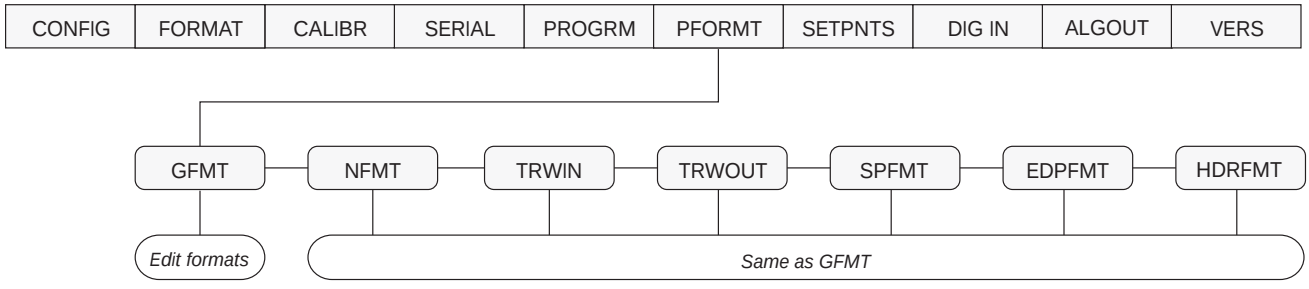

Figure 1. IQ plus 710 Ticket Formats on PFORMT Menu

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Digital Filtering

Digital filtering support for the IQ plus 510/710 indicators now includes digital filter sensitivity (DFSENS) and digital filter threshold (DFTHRH) parameters on the CONFIG menu. These values can also be configured using the DFSENS and DFTHRH EDP commands.

Figure 2 on page 2 shows the Version 1.4 CONFIG menu for the IQ plus 710.

The following discussion describes how to use the DFSENS and DFTHRH parameters to optimize digital filtering.

DFSENS and DFTHRH Parameters

The digital filter can be used by itself to eliminate vibration effects, but heavy filtering also increases settling time. The DFSENS (digital filter sensitivity) and DFTHRH (digital filter threshold) parameters can be used to temporarily override filter averaging and improve settling time:

- DFSENS specifies the number of consecutive scale readings that must fall outside the filter threshold (DFTHRH) before digital filtering is suspended.
- DFTHRH sets a threshold value, in display divisions. When a specified number of consecutive scale readings (DFSENS) fall outside of this threshold, digital filtering is suspended.

Setting the Digital Filter Parameters

Fine-tuning the digital filter parameters greatly improves indicator performance in heavy-vibration environments. Use the following procedure to determine vibration effects on the scale and optimize the digital filtering configuration.

1. In setup mode, set the digital filter (DIGFLTR parameter) to 1. Set DFTHRH to NONE. Return indicator to normal mode.
2. Remove all weight from the scale, then watch the indicator display to determine the magnitude of vibration effects on the scale. Record the weight below which all but a few readings fall. This value is used to calculate the DFTHRH parameter value in Step 4.

   For example, if a heavy-capacity scale produces vibration-related readings of up to 50 lb, with occasional spikes to 75 lb, record 50 lb as the threshold weight value.
3. Place the indicator in setup mode and set the DIGFLTR parameter to eliminate the vibration effects on the scale. (Leave DFTHRH set to NONE.) Find the lowest effective value for the DIGFLTR parameter.
4. Calculate the DFTHRH parameter value by converting the weight value recorded in Step 2 to display divisions:

   threshold_weight_value / DSPDIV

   In the example in Step 2, with a threshold weight value of 50 lb and a display division value of 5D: *50 / 5D = 10.* DFTHRH should be set to 10DD for this example.
5. Finally, set the DFSENS parameter high enough to ignore transient peaks. Longer transients (typically caused by lower vibration frequencies) will cause more consecutive out-of-band readings, so DFSENS should be set higher to counter low frequency transients.

Reconfigure as necessary to find the lowest effective value for the DFSENS parameter.

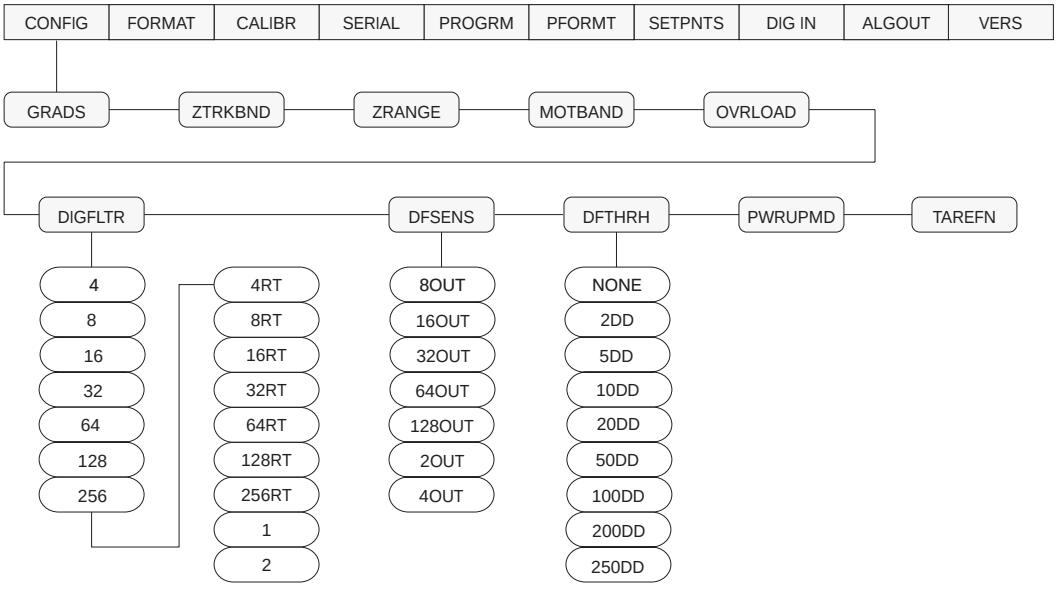

Figure 2. IQ plus 710 CONFIG Menu, Digital Filtering Parameters

Front Panel Time and Date Setting for the IQ plus 510

The DATESET and TIMESET parameters on the PROGRM menu allow time and date setting from the front panel when the indicator is in setup mode. Use the numeric entry procedure shown in Figure 3 to enter the current date or time. Values entered must be specified using the format specified on the DATEFMT (*MMDDYY* or *DDMMYY*) and TIMEFMT (*12HOUR* or *24HOUR*) parameters.

As in previous releases, the date and time can also be set using the SD (Set Date) and ST (Set Time) EDP commands.

When editing numeric values, press ◁ or ▷ to change the digit selected. Press △ or ▽ to increment or decrement the value of the selected digit.

Figure 3. IQ plus 510 Editing Procedure for Numeric Values

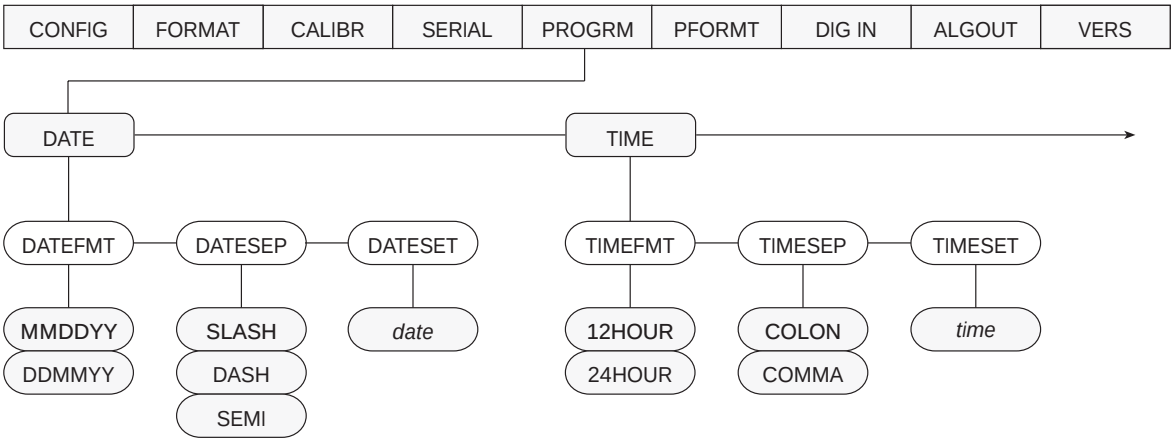

Figure 4. IQ plus 510 PROGRM Menu, DATE and TIME Parameters