Buffer operations

The Model 2000 has a buffer to store from two to 1024 readings and units. It also stores the channel number for scanned readings and overflow readings. In addition, recalled data includes statistical information, such as minimum, maximum, average, and standard deviation.

The buffer fills with the requested number of readings and stops. Readings are placed in the buffer after any math operations are performed. Buffered data is overwritten each time the storage operation is selected. The data is volatile; it is not saved through a power cycle.

The following paragraphs discuss storing and recalling buffered data.

Storing readings
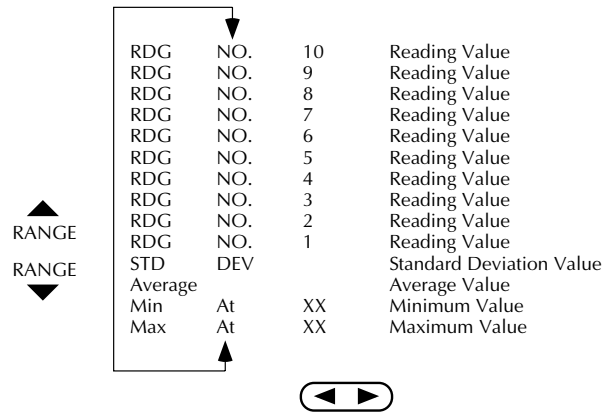
Use the following procedure to store readings:

1. Set up the instrument for the desired configuration.
2. Press the STORE key.
3. Using the ◄ , ► , ▲, and ▼ keys to select the number of readings desired.
4. Press ENTER. The asterisk (*) annunciator turns on to indicate a data storage operation. It will turn off when the storage is finished.

Recalling readings

Use the following steps to view stored readings and buffer statistics:

1. Press RECALL. The BUFFER annunciator indicates that stored readings are being displayed. The arrow annunciator indicates that more data can be viewed with the ◄ , ► , ▲, and ▼ keys.
2. As shown in Figure 3-10, use the cursor keys to navigate through the reading numbers, reading values, and statistics. For any of the buffer statistics (maximum, minimum, average, statndard deviation), the STAT annunciator is on.
3. Use the EXIT key to return to the normal display.

Figure 3-10
Buffer locations

RDG	NO.	10	Reading Value
RDG	NO.	9	Reading Value
RDG	NO.	8	Reading Value
RDG	NO.	7	Reading Value
RDG	NO.	6	Reading Value
RDG	NO.	5	Reading Value
RDG	NO.	4	Reading Value
RDG	NO.	3	Reading Value
RDG	NO.	2	Reading Value
RDG	NO.	1	Reading Value
STD	DEV		Standard Deviation Value
Average			Average Value
Min	At	XX	Minimum Value
Max	At	XX	Maximum Value

RANGE ▲

RANGE ▼

◄ ►

Buffer statistics

The MAX AT and MIN AT values are the maximum and minimum values in the buffer. The AVERAGE value is the mean of the buffered readings. The equation used to calculate the mean is:

$$y = \frac{\sum_{i=1}^{n} x_i}{n}$$

where: x_i is a stored reading
n is the number of stored readings

The STD DEV value is the standard deviation of the buffered readings. The equation used to calculate the standard deviation is:

$$y = \sqrt{\frac{\sum_{i=1}^{n} x_i^2 - \left(\frac{1}{n}\left(\sum_{i=1}^{n} x_i\right)^2\right)}{n-1}}$$

where: x_i is a stored reading
n is the number of stored readings

NOTE   *The Model 2000 uses IEEE-754 floating point format for math calculations.*