GE Panametrics

PT878

Quick Start Guide

September 2003

Process Control Instruments

PT878 Portable Flowmeter

Quick Start Guide *916-068A1*

GE Panametrics

Table of Contents

Warranty

Each instrument manufactured by GE Panametrics is warranted to be free from defects in material and workmanship. Liability under this warranty is limited to restoring the instrument to normal operation or replacing the instrument, at the sole discretion of GE Panametrics. Fuses and batteries are specifically excluded from any liability. This warranty is effective from the date of delivery to the original purchaser. If GE Panametrics determines that the equipment was defective, the warranty period is:

- one year from delivery for electronic or mechanical failures
- one year from delivery for sensor shelf life

If GE Panametrics determines that the equipment was damaged by misuse, improper installation, the use of unauthorized replacement parts, or operating conditions outside the guidelines specified by GE Panametrics, the repairs are not covered under this warranty.

The warranties set forth herein are exclusive and are in lieu of all other warranties whether statutory, express or implied (including warranties or merchantability and fitness for a particular purpose, and warranties arising from course of dealing or usage or trade).

Return Policy

If a GE Panametrics instrument malfunctions within the warranty period, the following procedure must be completed:

1. Notify GE Panametrics, giving full details of the problem, and provide the model number and serial number of the instrument. If the nature of the problem indicates the need for factory service, GE Panametrics will issue a RETURN AUTHORIZATION NUMBER (RAN), and shipping instructions for the return of the instrument to a service center will be provided.
2. If GE Panametrics instructs you to send your instrument to a service center, it must be shipped prepaid to the authorized repair station indicated in the shipping instructions.
3. Upon receipt, GE Panametrics will evaluate the instrument to determine the cause of the malfunction.

Then, one of the following courses of action will then be taken:

- If the damage is covered under the terms of the warranty, the instrument will be repaired at no cost to the owner and returned.
- If GE Panametrics determines that the damage is not covered under the terms of the warranty, or if the warranty has expired, an estimate for the cost of the repairs at standard rates will be provided. Upon receipt of the owner's approval to proceed, the instrument will be repaired and returned.

Introduction

This booklet provides directions for making basic flow measurements with the PT878, including the following:

- Keypad Description
- Powering Up
- Programming
- Displaying Measurements

This document is designed solely to get you up and running as quickly as possible. It does not provide a detailed description of the procedures, but simply the steps needed to make flow measurements.

Keypad Description

Since you need to use the keypad in the procedures that follow, you should familiarize yourself with the keys and their functions.

The PT878 keypad has 25 keys. The functions for each key are as follows (see Figure 1 on the next page):

- 3 function keys ([F1], [F2], [F3]) — enable you to select the special functions which appear at the bottom of the screen.
- 12 numeric keys (including - and .) — enable you to enter numeric data.
- 4 arrow keys ([◀], [▶], [▲], [▼]) — enable you to move through the menu options.
- [?] Help key— enables you to access on-line help.
- [MENU] Menu key — enables you to access the Main Menu.
- [ENTER] — enables you to enter a particular menu, and enters selected values into the PT878 memory.
- [SEL] — enables you to move between data measurements on the screen.
- [ESC] — enables you to exit menus or menu options at any time; cancels a numeric entry.
- Red key [⏻] — turns the power ON or OFF, and toggles the backlight ON or OFF.

Keypad Description (cont.)

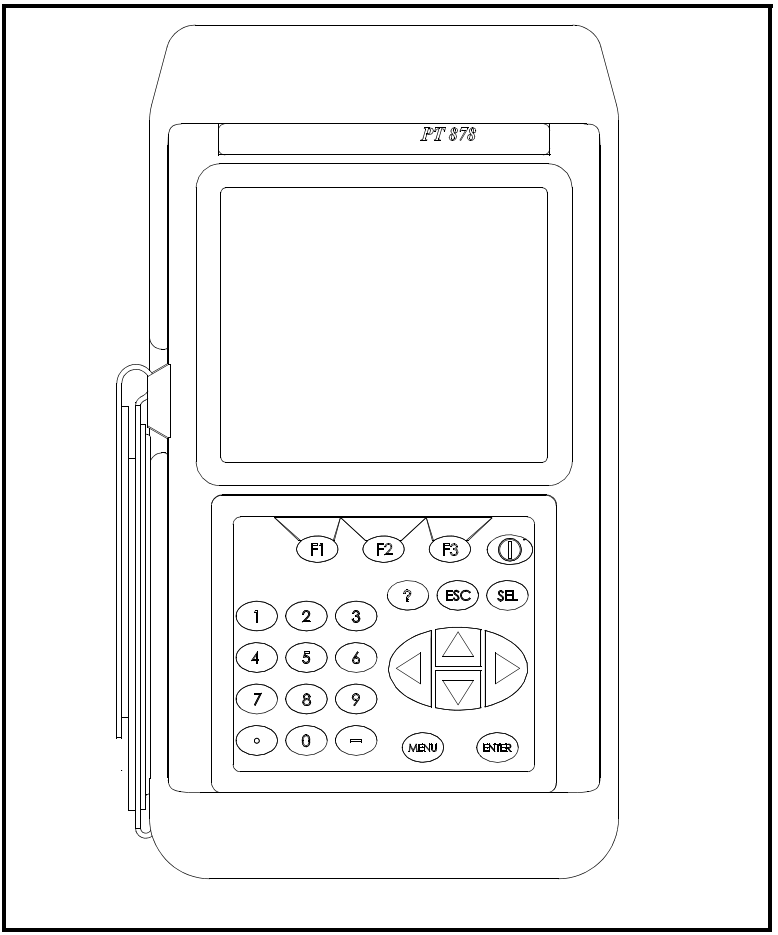

Figure 1: TransPort PT878 Keypad

Powering ON and OFF

To operate the PT878, the power cord must be plugged into line voltage or the battery must be fully charged as described in Chapter 2, *Initial Setup*, of the *User's Manual.* You must also install your transducers as discussed in the *Liquid Transducer Installation Guide* (document #916-055), and make transducer cable connections to the top of the PT878 as described in Chapter 2 of the *User's Manual.*

To turn the PT878 ON, press the red button in the upper-right-hand corner of the keypad. Immediately upon power up the PT878 emits a short beep and displays a "PCI Loader" message. It then validates the instrument programming, displays the GE Panametrics logo and the software version, and emits a long beep. If the meter fails any of these tests, contact GE Panametrics.

!WARNING!
If the meter fails the backup battery test, you must send the unit back to the factory for a battery replacement. Make sure you keep the NiCad batteries charged until you are ready to ship the unit back to the factory. Before shipping, print out all the log and site data, or transfer it to your PC.

After the meter conducts all the self checks, the screen then appears similar to the one shown in Figure 2 on the next page.

To turn the PT878 OFF, press the red key for 3 seconds. The screen now appears similar to Figure 3 on the next page. Three options are available:

- Press [F1] to turn the PT878 completely OFF.
- Press [F2] to send the PT878 into sleep mode. In this mode, some of the power supplies shut down, but the PT878 remains in a standby mode. Users can resume taking measurements immediately by pressing the power button.
- Press [F3] to cancel the command and return the PT878 to normal operation.

Powering On and Off (cont.)

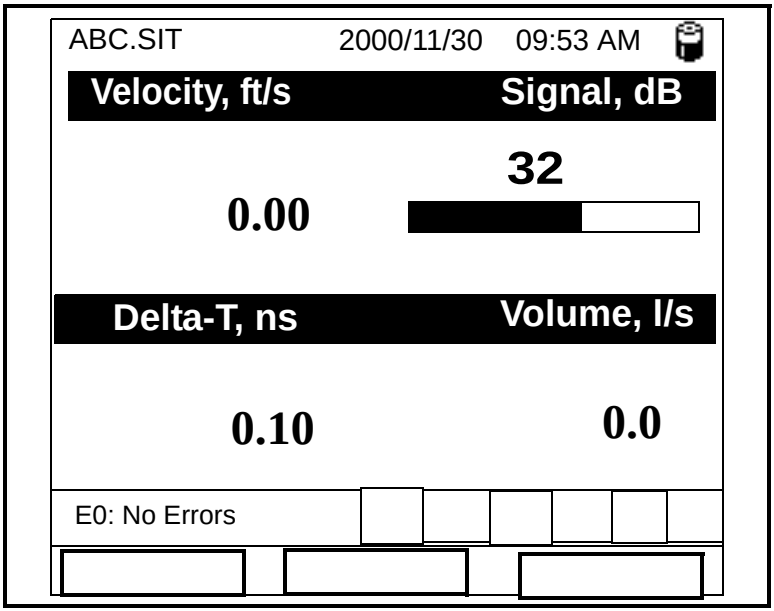

Figure 2: Screen After Power Up

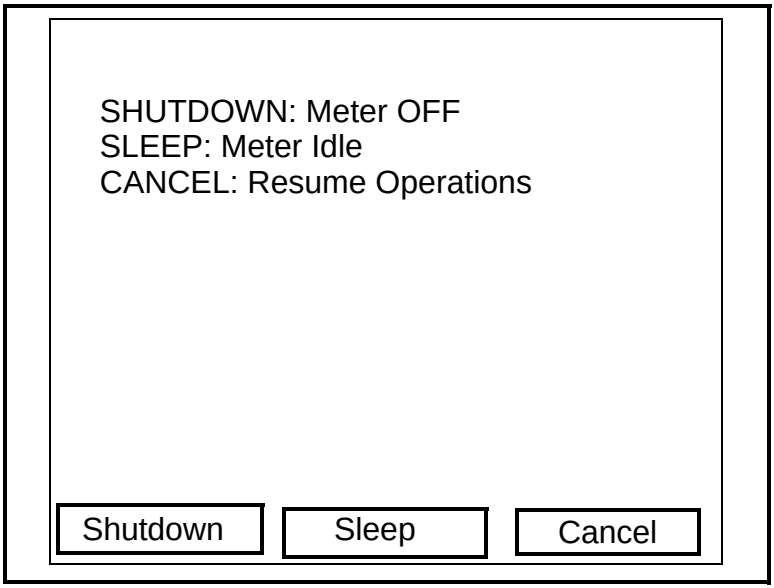

Figure 3: Screen After Power Down

Programming Transducer, Pipe and Fluid Parameters

In order for the PT878 to begin taking measurements, you must enter the transducer, pipe and fluid parameters. Once these parameters are entered, you may save them so that you can edit them at a later time.

To enter the *Program Menu*, press the [MENU] key at the lower right of the PT878 keypad. Press the [▶] arrow key once to scroll from the *Site Menu* to the *Program Menu*. At the *Program Menu*, press [ENTER]. The screen appears similar to Figure 4 below.

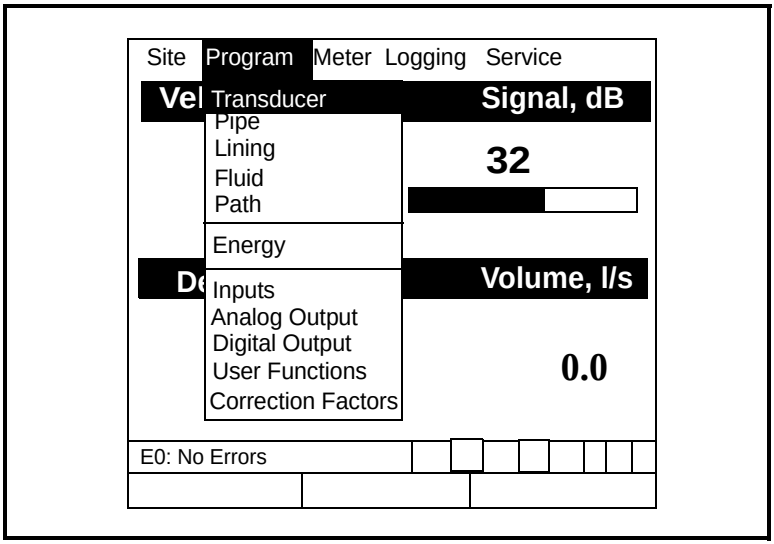

Figure 4: The PROGRAM Menu

Transducer Parameters

This section describes how to enter parameters for all standard transducer types. To step through each parameter within the option, press the [▼] key. Begin by using the following steps:

Note: *If you are using a special transducer, refer to Chapter 3 in your User's Manual.*

1. To enter the Transducer option from the *Program Menu*, press [ENTER].
2. The first prompt asks you to select whether you are using a wetted or a clamp-on transducer.
   a. Use the [◀] and [▶] keys to scroll between the two types.
   b. Press [ENTER] to confirm the choice.

Note: *If the PT878 does not scroll to a particular parameter, it is not necessary for that transducer or pipe type.*

3. The next prompt asks you to enter the transducer number.
   a. From the *Type* prompt, press the [▼] key to reach the *Transducer* prompt, and press [ENTER].
   b. A drop-down list of transducer numbers opens. (The list varies, depending on whether you have selected wetted or clamp-on in the previous prompt.) Press the [▼] or [▲] keys to scroll to the appropriate number. To speed scrolling, you can press the [▶] key to scroll down by a page, or the [◀] key to scroll up by a page.
   c. Press [ENTER] to confirm your selection.
4. The PT878 supplies the needed parameters for the selected transducer. Press the [▼] key to return to the *Transducer* tab at the top and proceed to the *Pipe* tab.

Pipe Parameters

This section describes how to enter parameters for most standard pipe materials and diameters. To step through each parameter within the option, press the [▼] key. Use the following steps to enter the pipe parameters.

1. From the *Transducer* tab, press the [▶] arrow key to reach the *Pipe* tab, and press [ENTER].
2. The first prompt asks you to select the pipe material.
   a. Press [ENTER] to enter the material prompt.
   b. A drop-down list of materials opens. Press the [▼] or [▲] keys to scroll to the appropriate material, or scroll to "Other" for a material not on the list. You can press the [▶] key to scroll down by a page, or the [◀] key to scroll up by a page.
   c. Press [ENTER] to confirm the choice.
   d. (This prompt only appears if you have selected "Other" in step b.) The meter prompts you to enter the sound speed. Use the numeric keys to type the desired sound speed in the text box, and press [ENTER] to confirm the choice.
3. At the *Diameter* prompt, the meter asks for the pipe outside diameter and thickness.
   a. You must select from two choices, outside diameter or circumference.
   - The prompt moves to the OD (outside diameter) text box. Type the thickness (in mm or in.) into the text box, and press [ENTER] to confirm the choice, or
   - Move the prompt to the OD X PI (circumference) text box. Type the OD (in mm or in.) into the box, and press [ENTER] to confirm your choice.

Pipe Parameters (cont.)

Note: *If you do not know the outside diameter, refer to* Sound Speeds and Pipe Size Data *(914-004) or use the On-Line Help function (refer to the* User's Manual*).*

b. In either case, the next prompt asks for the wall thickness. Type the value (in mm or in.) into the box, and press [ENTER] to confirm your choice.

Note: *If you have selected certain pipe materials (carbon or stainless steel, cast iron, PVC and CPVC), you have the option of entering the pipe dimensions by a standardized schedule. Refer to Chapter 3 of the* User's Manual *to learn more about this option.*

4. Press the [▲] key twice to return to the Pipe tab.

You have completed entering data in the *Pipe* tab. Proceed to the *Fluid* tab.

Fluid Parameters

This section describes how to enter parameters for most common fluids. To step through each parameter, press the [▼] key.

1. From the *Pipe* tab, press the [▶] arrow key twice to reach the *Fluid* tab, and press [ENTER].

2. The first prompt asks you to select whether or not you want Tracking Windows. This feature is used when the process fluids soundspeed fluctuates considerably. (Default operation is "No.")

a. Use the [◀] and [▶] keys to scroll to the appropriate radio button.

b. Press [ENTER] to confirm your selection.

Fluid Parameters (cont.)

3. To select the fluid type:

a. Press [ENTER] to open the drop-down menu. (The choices vary, depending on whether or not you have selected Tracking Windows.)

b. Scroll to the appropriate fluid. If you do not see your fluid on the list, select "Other."

c. Press [ENTER] to confirm your selection.

- If you have selected a preprogrammed fluid, the PT878 supplies the sound speed. Pressing the [▼] key returns you to the Tracking Windows prompt.
- If you have selected "Other," the prompts differ, depending on whether or not you have enabled the Tracking Windows.
  - If you have not enabled the Tracking Windows, the PT878 prompts you to enter the sound speed. Use the numeric keys to enter the desired sound speed, and press [ENTER].
  - If you have enabled the Tracking Windows, the PT878 prompts you for minimum and maximum sound speeds.

a. Use the numeric keys to enter the desired minimum speed. Press [ENTER].

b. Press the [▼] key to move to the maximum speed text box. Use the numeric keys to enter the desired maximum speed. Press [ENTER].

At the end of either sequence, pressing the [▼] key returns you to the Tracking Windows prompt. You have completed entering data in the *Fluid* tab. To confirm the entries and return to Operate Mode, press [F3] (OK).The PT878 returns to Operate Mode.

It is a good idea to read Chapter 3, *Programming Site Data*, in the *User's Manual* for more details on programming site parameters.

Saving Site Data

Now that you have entered all the necessary data, the PT878 will give you the opportunity to save it into a site file using the following steps:

1. To open the *Site Menu*, press the [MENU] key at the lower right of the PT878 keypad. Then press [ENTER]. The screen appears similar to Figure 5 below.

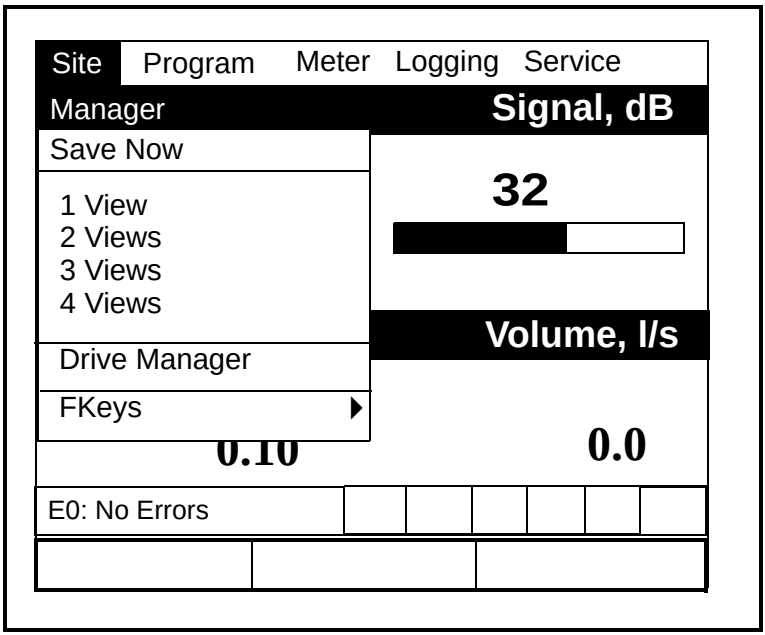

Figure 5: The Site Menu

1. Press the [▼] key to reach the "Save Now" option, and press [ENTER].
2. A window appears, asking if you want to save the current site (DEFAULT. SIT).
   - Press [F2] (No) to cancel saving the site, or
   - Press [F3] (Yes) to save the site.

The PT878 returns to displaying measurements. If you want to save the site under another name, or create a new site, refer to Chapter 4, *Creating and Managing Sites*, in the *User's Manual*.

Changing the Number of Displayed Measurements

The PT878 can display one to four different measurement parameters simultaneously. However, sometimes you might wish to display only one or two parameters. To change the number of open display windows from within the *Site Menu* (shown in Figure 5 on the previous page), use the [▼]or [▲] arrow keys to move to the desired number of views (1 View, 2 Views, etc.) Press [ENTER]. The screen displays the desired number of windows.

To display data in other formats (such as bar or line graphs) or modify the softkeys, refer to Chapter 5, *Displaying and Configuring Data*, in the *User's Manual*.

Changing the Measured Parameters

Once the PT878 is programmed, you can display the following measurements on the screen:

- Velocity
- Volumetric
- Forward Totals
- Reverse Totals
- Power
- Energy
- Diagnostics

To enter the Measurement option:

1. Press [SEL] from the Operate Mode window until you have reached the desired measurement.
2. Press [ENTER] to open the *Display Menu*. The screen appears similar to Figure 6 below.

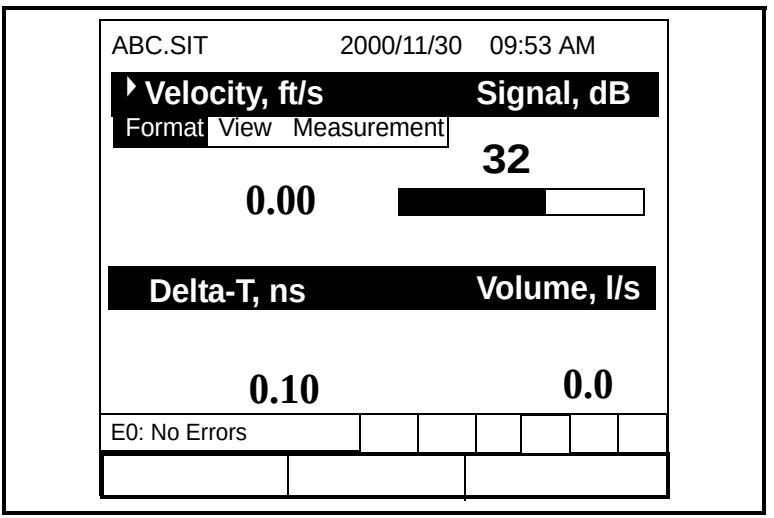

Figure 6: The Display Menu

Changing the Measured Parameters (cont.)

3. Press the [▶] twice to highlight the Measurement option, and press [ENTER].
4. A drop-down menu entry, Change, appears. Press [ENTER] again.

Another window opens, shown in Figure 7 below; the left column displays the measurement data sources, while the right column displays English and metric measurement units (or, with the Diagnostics source shown, a list of diagnostics parameters).

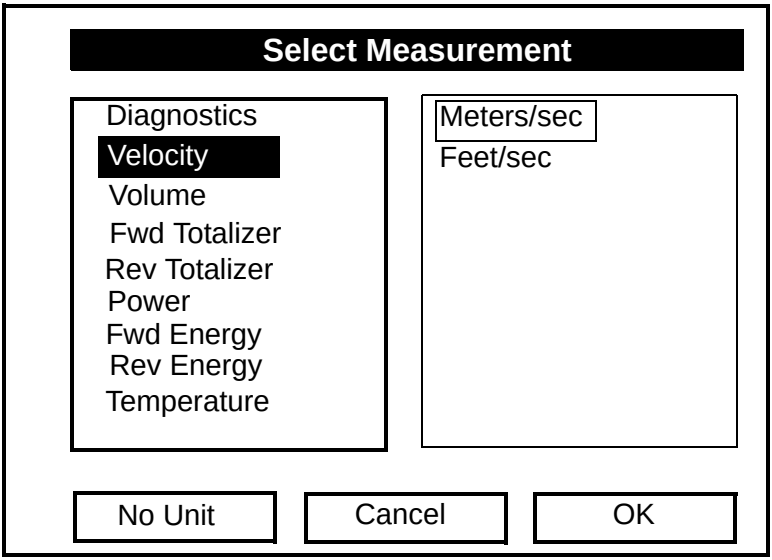

Figure 7: Measurement Selection Window

5. Use the [▼] and [▲] arrow keys to reach the desired data source, and press [SEL].
6. Then use the [▼] or [▲] arrow keys to select the desired measurement unit (or diagnostic parameter). Press [F3], OK, to confirm the entry.

The screen returns to Operate Mode, and displays any changes.

Index

A

C

D

E

F

H

K

M

Index (cont.)

N

P

R

S

T

W

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