

Sonix Proving Instructions

Proving the Sonix2000 Meter
with a Dresser Model 5 Prover

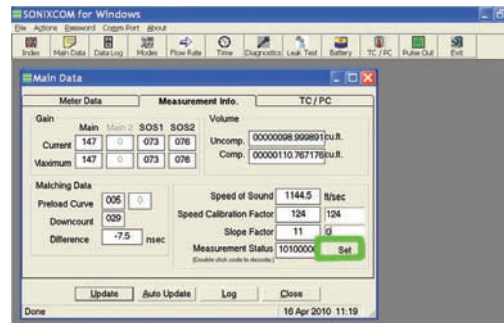


Figure 15

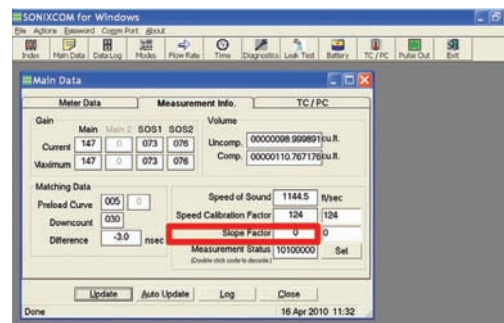


Figure 16

6. Return to the **Meter Modes** menu:

- Ensure the EEPROM is LOCKED, to prevent any other changes (Figure 17)

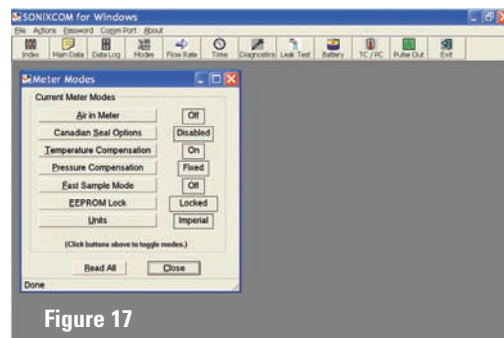


Figure 17

Reset Diagnostics

Reset the diagnostic log to clear flags from occurring at midnight due to EEPROM being unlocked and locked, and the power being cycled off and on. (Figure 18)

- Note that if the index is going to be reset for roll over, the diagnostic reset steps are optional, as the roll over will perform a reset.

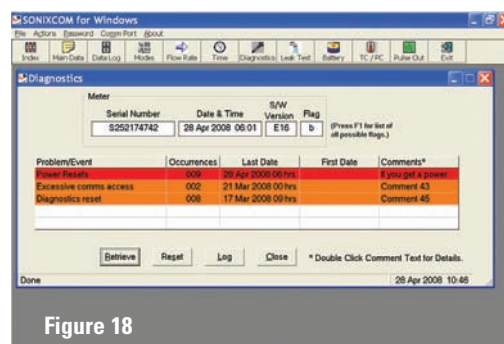


Figure 18

Resetting the diagnostics will initiate a prompt for password. The default password is 0000 (zeros) or just click **OK**. (Figure 19)

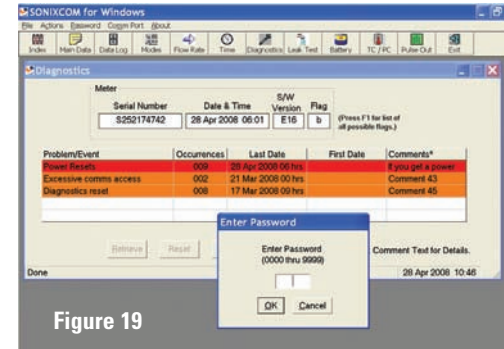


Figure 19

1. After resetting the Diagnostics, remove the optical probe from the meter. Any further communication with the meter will generate a communication b flag at midnight.
2. It is a good practice to Reset the Diagnostic log after any communication with a SONIX meter to prevent communication flags from occurring. (Figure 20)

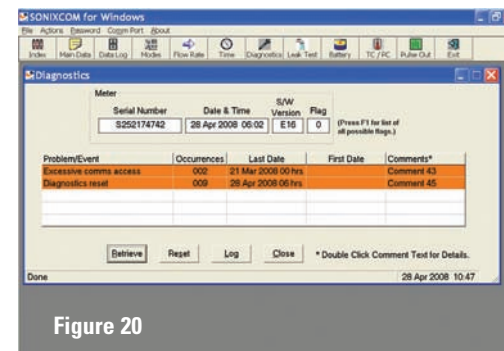


Figure 20

Repeat the Test

Return to Setup the Prover (page 2 of this document) and repeat the test points to assure that the changes to the speed calibration and slope factors result in the desired accuracy.

Authorized Distributor



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Applicable Meters

- Sonix 2000

Components

- Sonix2000 Meter
- Mercury Instruments MiniMax Cable
- Computer equipped with SONIXCOM software for Windows Shop Version 3.04 (or newer)
- Dresser Model 5 Prover

Tools

- Selection of screwdrivers and wrenches
- pressure and temperature connection fittings
- 6mm hex key

Proving Tasks

- Affix Sonix meter outlet to prover with the flexible hose.
- Connect the MiniMax Prover Cable wire ends to the meter corrected pulse output terminals and the prover's blue junction box ID Pulsar location
- Connect pressure and temperature fittings to the meter, piping, and the prover's blue junction box
- Program Sonix2000 Meter
- Set up and program prover

Affix Sonix to Flexible Hose or Proving Stand

Follow standard piping practices as described in the Dresser Model 5 Prover manual.

Launch Sonixcom Software

Turn the computer **On** and double-click the SONIXCOM software icon to launch the program.

1. Click the **Modes** icon at the top menu bar On the **Meter Modes** menu:

- Ensure the EEPROM is UNLOCKED, so that changes can be made
 - Turn Fast Sample Mode ON
 - Turn Pressure Compensation OFF
- Click **Close**. (Figure 1)

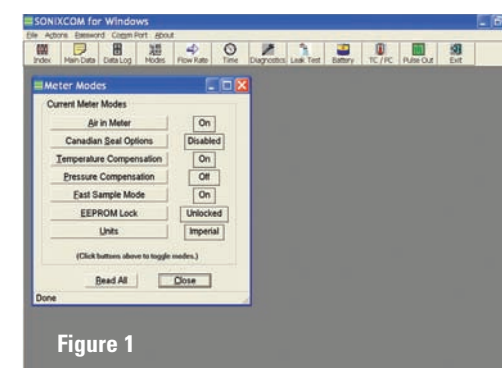


Figure 1

2. Click the **Pulse Out** icon at the top menu bar On the **Pulse Output** menu:

- Ensure the EEPROM is UNLOCKED, so that changes can be made
- Set the Amount of Volume per Pulse to 1 ft3
- Select Pulse 1 - uncorrected / Pulse 2 - corrected
- Make sure the Pulse Output is turned ON (Figure 2)

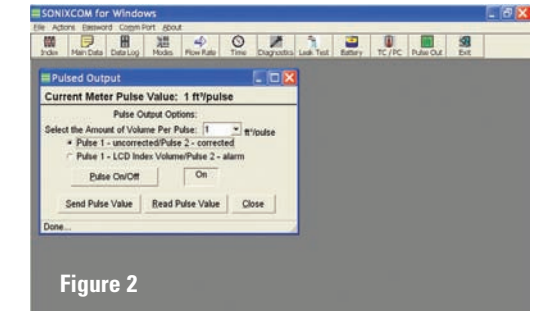


Figure 2

Connect the Prove Cables

1. Connect the red and black Rotary Mini Max Prove Cable to the Corrected Volume terminal of the Sonix 2000 pulse board as shown (Figure 3)
Note: You will need to remove the Terminal Block Plug from the ends of the wires.

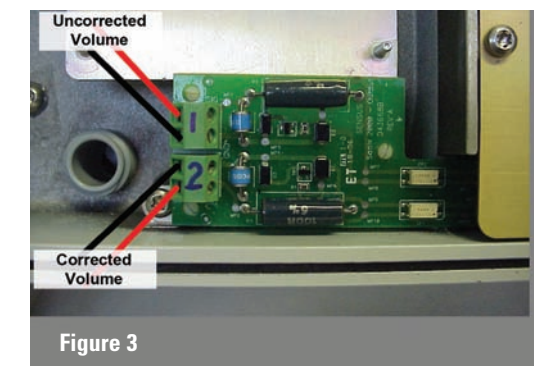


Figure 3

2. Connect the Rotary MiniMax Prove Cable to the ID Pulsar location on the blue junction box (Figure 4)

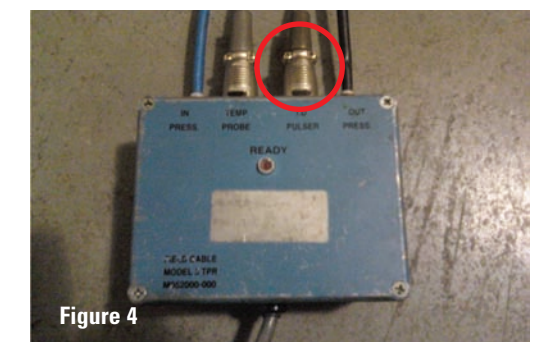


Figure 4



Setup the Prover

Before you begin:

- To minimize pulsation effects, Sensus recommends coiling excess hose, or utilizing the pulsation dampening tank for turbo meters, between the Sonix meter outlet and the prover inlet. (Figure 5)



Figure 5

- Ensure the inlet to the Sonix2000 meter is unobstructed (Figure 6)



Figure 6

Connect the differential and static pressure measurement lines and temperature probes

On the Model 5 Prover set up screen, set or verify the following test parameters. (Figure 7)

- Prover Capacity – Select the proper master meter for the test. Typically 2M or 10M
- Test Control Mode – Select Optical Scanner
- Meter Output – Select TC if Sonix2000 meter is TC or NonTC if Sonix2000 meter is NonTC
- TC Option – Select Diaphragm TC Continuous Compensation
- Pulses/Test (PPT) – Since the meter pulse output is set to 1 pulse per 1 cubic foot, a 100 cubic foot test will require 100 pulses, a 25 cubic foot test will require 25 pulses and so on.
- Base Temperature – is usually 60°F.
- Test Volume – The test volume and the Pulses/Test will be the same since the meter is set for 1 pulse / 1 cubic foot. Longer test volumes usually result in better repeatability.

- Number of Test Points – Typically two test points are conducted at 20% and 100% of capacity.
- Repeats – It's a good practice to repeat the point once.

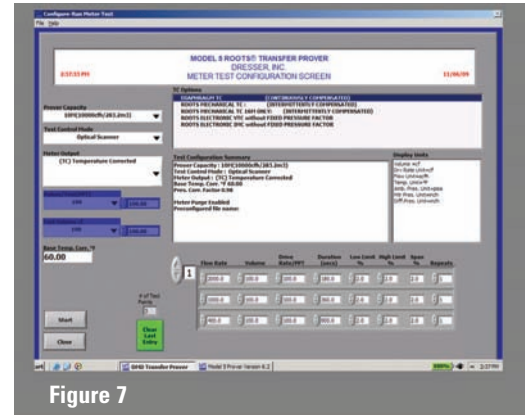


Figure 7

Begin the Proving Process

Initiate testing

Once the test has begun, the software will display a status screen. The screen will update the various reading parameters until the test has completed. (Figure 8)



Figure 8

Recalibrate the Sonix2000 Meter with SONIXCOM Software

On the **Meter Modes** menu: (Figure 9)

- Ensure the EEPROM is UNLOCKED, so that changes can be made
- You will be prompted to enter a password. The default password is "0000" (zeros) or just click **OK**

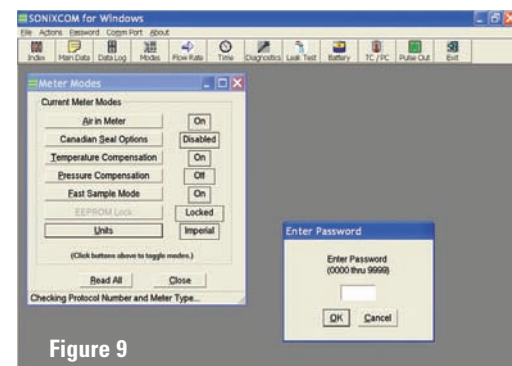


Figure 9

On the **Main Data** menu:

1. Select the Measurement Info tab

- The Speed Calibration Factor and Slope Factors are displayed. These settings can only be changed using **SONIXCOM 3.04 Shop Version** (or newer). Enter changes in the input boxes, located to the right of the current settings. (Figure 10)

- Permissible Speed Factors are from 0 to 255.

Note: Change and set the speed and slope factors independently, as shown in this procedure. Changing and setting the speed and slope factors at the same time may cause variation in the test results.

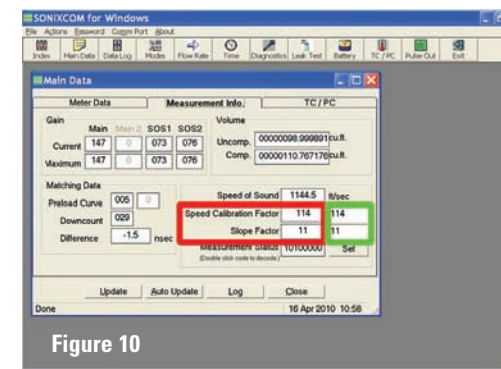


Figure 10

Changing the Speed Calibration Factor

- +1 unit increase in Speed Factor shifts both open and check faster +0.04%
- 1 unit decrease in Speed Factor shifts both open and check slower -0.04%
- Example: Changing Speed Calibration Factor from 114 to 124 will speed open and check up 10 x 0.04, or +.40%

2. Once new settings are entered, click the **Set** button to program the new factors into the Sonix2000 meter firmware.

3. Once programmed, the new Speed Factor will display in the Speed Calibration Factor box. (Figure 11-13)

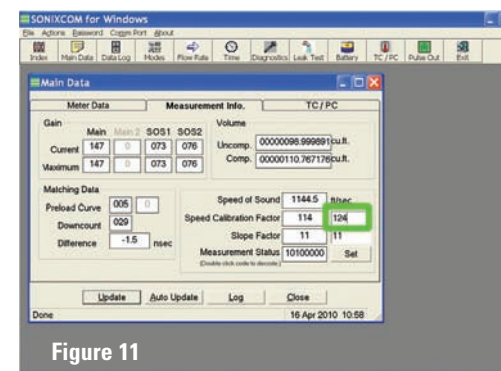


Figure 11

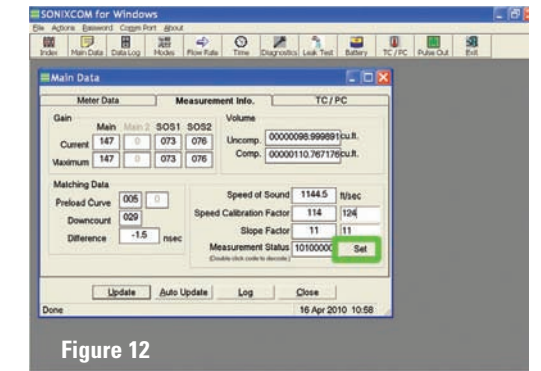


Figure 12

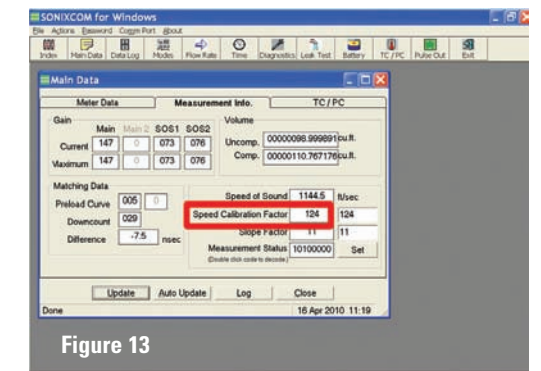


Figure 13

Changing the Slope Factor

- +1 unit increase in Slope Factor shifts check to open slower 0.04%
- 1 unit decrease in Slope Factor shifts check to open faster 0.04%
- Permissible Slope Factors are from -25 to +25 (Note: not as exact as speed).
- Example: Changing Slope Factor from 11 to 0 will speed the check to open approximately 11 x 0.04, or +.44%

4. Once new settings are entered, click the **Set** button to program the new factors into the Sonix2000 meter firmware.

5. Once programmed, the new Slope Factor will display in the Slope Factor box (Figure 14-16)

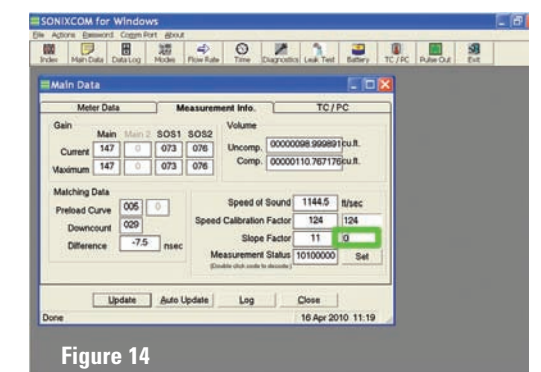


Figure 14