SP620 Differential Manometer Smart Probe

Test Products International, Inc.

Connects to smart phone and uses the TPI Smart Probe App

Perform differential pressure measurements

Up to 6 SP620 smart probes can connect to a single mobile device (most devices)

3 Year Limited Warranty

Test the TPI Advantage

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A. INTRODUCTION

1. Congratulations: Thank you for purchasing TPI products. The SP620 is easy to use and built to last. It is backed by a 3 year limited warranty.

2. Product Description: The SP620 is a differential manometer "Smart Probe". It connects to your mobile device and uses the TPI Smart Probe App to display temperature readings. Data can be exported to a CSV file as well.

B. SAFETY CONSIDERATIONS

1. Never attach the SP620 to a hot surface.

2. Always ensure the pressure being measured does not exceed the capability of the SP620.

3. Never use the SP620 to measure liquid pressure.

4. Do not expose the unit to damp environments for extended periods of time.

C. SPECIFICATIONS

SP620 Smart Probe Differential Pressure Meter Specifications	
Input Type	Dual input differential
Connection Type	1/4 inch barb
Measurement Range	-60 inH2O to 60 inH2O (-150 mbar to 150mbar)
Accuracy	+/-0.02 inH2O (0 to 1 inH2O) / +/-(1.5% + 20 digits) (> 1 inH2O) +/-0.05 mbar (0 to 1 mbar) / +/-(1.5% + 20 digits) (> 1 mbar)
Resolution	0.01 inH2O / 0.01 mbar
Units of Measure	7 Units (mbar, inH2O, kPa, PSI, mmHg, inHg, mmH2O)
Operating Temperature	-4^{0}F to 122^{0}F (-20^{0}C to 50^{0}C)
Communication	Bluetooth version 4.2 (Use with TPI Smart Probe App) FCC ID: QOQBGM113 IC: 5123A-BGM113 209-J00204
Battery Type	AAA x 3
Battery Life	80 hours typical
Standard Accessories	A613 silicone tubing 30" (2pcs), A603 1/8" NPT fittings (2pcs)

CE

D. INSTRUMENT OVERVIEW

1. Input connection for pressure measurements. Inputs are marked + and -.

2. SP620 status LED indicator.
   Orange and blinking = Bluetooth not connected
   Green and blinking = Bluetooth connected
   Blinking Red with either of the above = Low battery

3. Power Key. Press and hold to turn the instrument on. Press and hold to turn the instrument off.

4. Built-in magnet. Attach to metal surfaces for hands free operation. Ensure surface is not hot.

5. Serial number location. Last three digits are the product identification number and marked in bold. Use this number to distinguish between models when several SP620's are connected to a phone or tablet.

6. Screw to open battery compartment. Turn the screw counter clockwise until it is just above the compartment door. Lift on the screw to open the compartment.

The inputs are marked + and -. Any pressure connected to the - port will be subtracted from the + port. For standard pressure / vacuum measurements use the + port only. Use the + and - port when performing differential measurements.

E. TAKING A MEASUREMENT

1. Download and install the TPI Smart Probe App onto your mobile device. Run the App. The "Main-Real Time" screen will be displayed.

   The App will say "No Devices" until a smart probe has been connected.
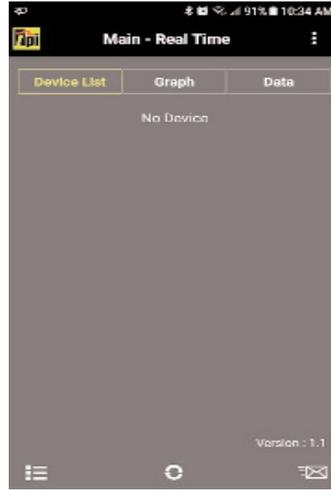
2. Press and hold the SP620 On/Off key down until it turns on. The LED indicator will initially be orange and blink.

   The SP620 will auto connect to your mobile device. The LED indicator will turn Green and blink to indicate a link has been established. The App will display the model and ID number of the smart probe connected.

   If the SP620 does not auto connect tap refresh on the App.

3. Tapping the list icon allows optional functions to be accessed. These include Show/Hide, Unit, and Zeroing Sensors.

   Set the units of measure at this time.
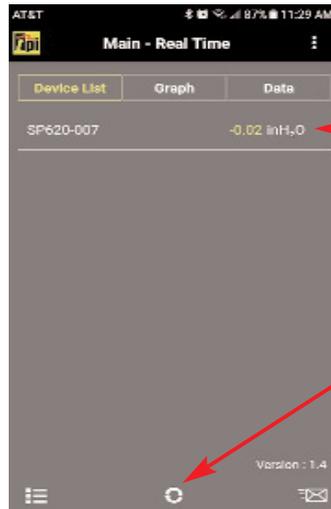
Displays the measured pressure.

Refresh
This also clears any data accumulated.
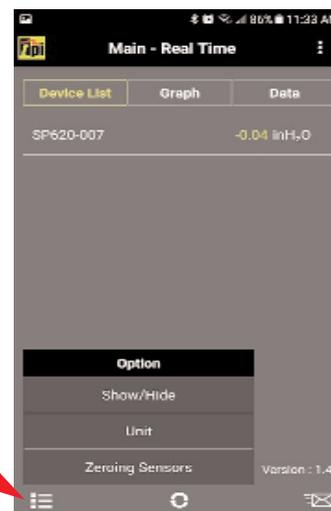
Show/Hide : Allows a device to be seen or hidden. Useful when multiple devices are connected.

Unit : Switch between units of pressure.

Zeroing Sensors: Used to zero the SP620. (See page 4.

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TAKING A MEASUREMENT (continued)

4. Connect tubing to the SP620. For a standard measurement connect tubing to the + port and leave the - port open. For a differential measurement connect tubing to the + and - ports.

5. Tap the list icon to bring up the options menu.

6. Select "Zeroing Sensors" to bring up the field calibration screen.

7. Tap the + icon to select the SP620 to be zeroed.

8. Tap the SP620 to be zeroed.

7. Tap the Reset icon to set the pressure reading to 0 (+/- 0.05 counts)

8. Tap Close to return to normal operation.

9. Connect the tube(s) to the device under test and read the pressure. Examples are:

Pressure:	+ port	- Port	Displayed Rdg
	10inH2O	Open	10inH2O
	-10inH2O	Open	-10inH2O
	10inH2O	5inH2O	5inH2O
	10inH2O	25inH20	-15inH2O

F. ADDITIONAL APP FEATURES

1. Tapping "Graph" switches the display to graph mode. The temperature will be displayed as a line graph.

   If multiple SP620's are being used, each will have a different color in the App.
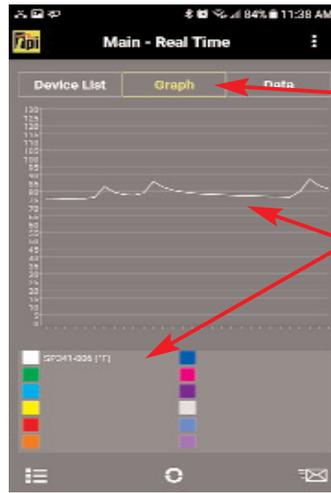
Tap "Graph".

Each SP620 is displayed in a different color in the line graph.

2. Tapping "Data" switches the display to show the measured data in a list format.

   Each reading in the list will be dated and time stamped.

Tap "Data".

The measurement data is shown in a list with a date and time stamp.

Tapping the Refresh icon clears this data.

3. Tapping the mail icon enables test data to be exported in a CSV file via email.

Tap the mail icon.

Test data will be exported in a CSV file via email.

4. Exported data in the CSV file display with the date and time stamp.

   If a company and customer name has been entered they will be exported too. See page 5 for setting up the customer and company name.

Company Name :	Test Products Intl
Company Address :	9615 SW Allen Blvd
Customer Name :	Sample Customer
Customer Address :	1111 Sample Way
Building Name :	Bldg 3
Building Address :	1222 Sample Ave

Date	Time	SP620-007(inH2O)
5/7/2018	11:44:01	20.55
5/7/2018	11:43:59	20.74
5/7/2018	11:43:57	20.61
5/7/2018	11:43:55	21.03
5/7/2018	11:43:53	21.13
5/7/2018	11:43:51	21.4

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G. DROP DOWN MENU

The Smart Probe App has a Drop Down menu allowing access to additional app features.

1. Tap the Drop Down Menu icon to access additional features.

Main - Real Time: Tapping this returns you to the main screen.

Select Application: Tapping this pulls up sub applications for variious smart probes. These include Temperature differential (SP341), Air Volume Calulation (SP565), and Tightness Test (SP620). Note: There are no sub applications for the SP1000.

Company Info: Allows you to enter your information to show up on the CSV file report. You can enter your company name, address, and email.

Customer Info: Allows you to enter the information of the customer the tests are being performed for. You can enter the customer name, address, and email. You can also enter the building information in cases where the tests are being performed somewhere off-site from the customer.

Exit: Closes the Smart Probe App.

H. ENTERING COMPANY AND CUSTOMER INFORMATION

The Smart Probe App allows you to enter your company information and the customer information who the test is being performed for. This information will be exported in the CSV file (see page 4).

1. Tap the Drop Down Menu icon to access additional features.

2. Select "Company Info" to enter your information to show up on the CSV file report. You can enter your company name, address, and email.

3. Select "Customer Info" to enter the information of the customer the tests are being performed for. You can enter the customer name, address, and email. You can also enter the building information in cases where the tests are being performed somewhere off-site from the customer.
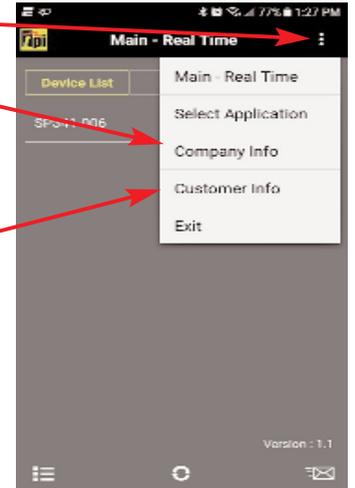
I. PERFORMING TIGHTNESS TEST

The SP620 and smart probe app provide the capability of performing a standing pressure or Tightness Test/. This test is mostly used in Europe and is a way to check for leaks in sealed systems.

1. Tap the Drop Down Menu icon to access additional features.

2. Tap "Select Application".
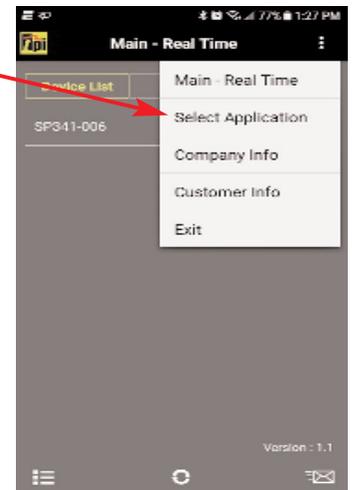
3. Select "Tightness Test".

Note: The other applications shown are for different model smart probes and do not work with the SP620.
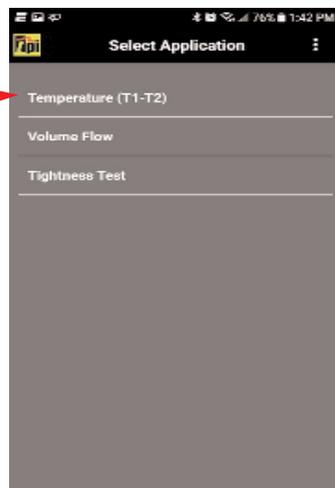
4. Tap the + icon to select the SP620 to use for the measurement.

Tap the SP620 being used.

PERFORMING TIGHTNESS TEST (cont)

5. Pressure P2 will be displayed.

   Tap the list icon to access the optional menu.

   Tap on Tightness Test Setting.

6. Tap the list icon to access the optional menu.

   Tap on Zeroing Sensors
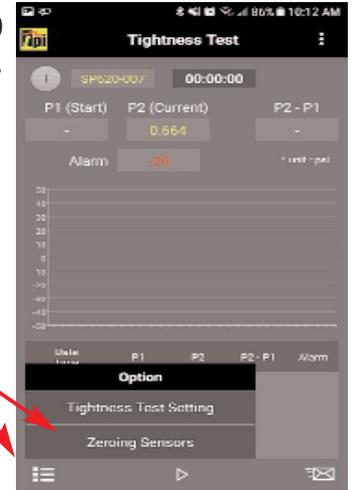
7. The tightness Test settings menu will display.

   Set the alarm point for the maximum allowable drop from the starting pressure.

   Set the stabilization time. This is the time prior to the clock starting to give the pressure reading time to become steady.

   Set the test time.

   Select whether the alarm should vibrate.

   Tap Apply and Close.

8. Tap the + icon to select the SP620 to be zeroed.

   Tap the SP620 to be zeroed.

   Tap the Reset icon to set the pressure reading to 0 (+/- 0.05 counts)

   Tap Close to return to normal operation.
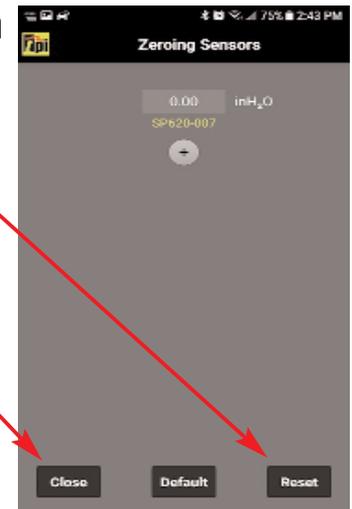
PERFORMING TIGHTNESS TEST (cont)

9. Connect the tubing to the device under test. Pressurize the device.

   P2 will display the current pressure.

10. Tap the "Play" icon to begin the test. . A countdown timer will begin. This is the stabilization period.
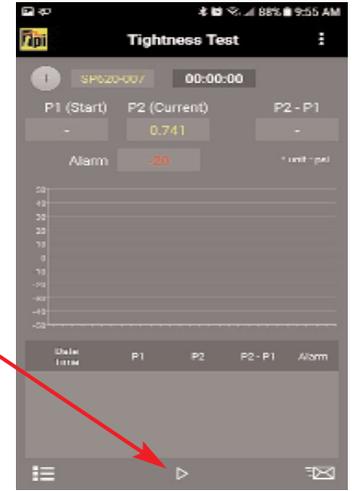
11. Once the stabilization period is over the test will begin.

   The countdown timer resets and counts down during the test.

   P1will become the start pressure and P2 will be the current pressure being measured.

   The standing pressure test will run for the length set in the settings menu.
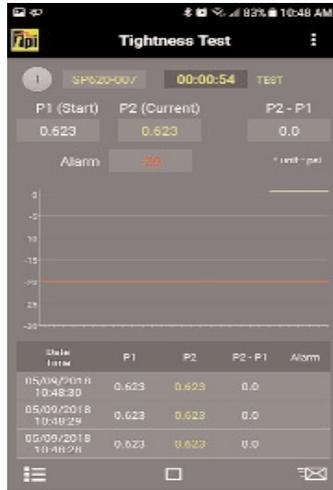
12. When the test is complete the results will be shown. This information can be sent in a CSV file via email as required.

   To exit Tightness Test, tap the drop down menu and tap "Main Real-Time".
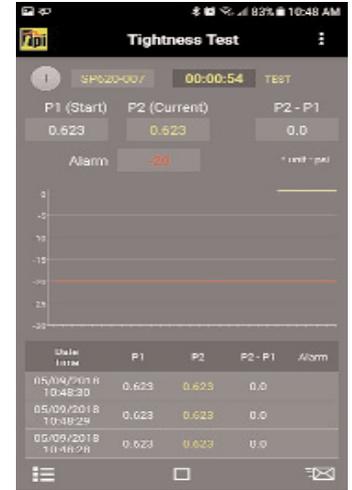
J. MAINTENANCE

1. Clean the surface of the instrument with a damp cloth.
2. Replace the three AAA batteries when the low battery indicator appears.

K. TROUBLE SHOOTING

Symptom	Probable Cause
Pressure seems inaccurate.	• Check tubing for kinks or cuts. • Low battery. • Ensure connection with smart device is working.
SP620 does not turn on.	• Dead or low batteries. • Not holding down power switch until unit turns on. • Defective POWER ON switch.
SP620 displays "OL".	• Pressure limit exceeded.

L. ACCESSORIES

Included Accessories

Part Number	Description
A620SP	Soft pouch
A774	General purpose tubing

Optional Accessories

Part Number	Description
A925	Carrying case for 4 smart probes
A926	Carrying case for 1 or 2 smart probes

M. WARRANTY

This product is warranted to the purchaser against defects in material and workmanship for three years from the date of purchase.

Covered by Warranty: Repair parts and labor; or replacement of the product at company's option. Normal transportation charges to the purchaser are also covered.

Not Covered by Warranty: Damages to the product which are the result of abuse, improper use or maintenance are not covered. Any other expense, consequential damages, incidental damages, or incidental expenses including damages to property are not covered. Transportation expenses to the company are not covered.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

To Obtain Warranty Performance: Include with the product: your name, address, phone number, written description of the problem and proof of purchase date. Carefully package and return to:

TPI, Inc.	**TPI Canada**	**TPI, Europe Ltd..**
9615 SW Allen Blvd.	**342 Bronte Rd. S., Unit 6**	**Longley House, International Drive**
Beaverton, OR 97005	**Milton, Ontario L9T 5B7**	**Southgate Crawley**
USA	**Canada**	**West Sussex RH10 6AQ England**
503-520-9197	**905-693-8558**	**44(0) 1293 530196**
www.testproductsintl.com	**www.tpicanada.com**	**www.tpieurope.com**

Implied Warranties: Any implied warranties including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to three years from date of purchase. To the extent any provision of this warranty is prohibited by federal or state law and cannot be preempted, it shall not be applicable. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

N. REPLACING BATTERIES

1. Turn the battery compartment screw counter clockwise until it is just above the compartment door. Lift on the screw to open the compartment.

2. Replace the three AAA batteries.

3. Re-install the battery cover and tighten the screw by turning it clockwise.

NOTES

NOTES

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