FAQs

SMART SERVICE TOOL KIT

U.S. Patent No. 10,281,183

Wireless Temperature and Pressure Sensors

FREQUENTLY ASKED QUESTIONS

1. **What are the part numbers?**
   Temperature Sensor #953499, Low Pressure Sensor #953501, High Pressure Sensor #953502, SMART Service Tool Kit (case with 2 Temperature Sensors, 1 Low Pressure Sensor and 1 High Pressure Sensor) #953495
2. **How much does it cost?**
   Contact your authorized wholesaler or distributor for pricing.
3. **What is included in the kit?**
   The SMART Service Tool Kit contains a low pressure wireless sensor, a high pressure wireless sensor, 2 wireless temperature sensors, 2 adapters for mounting sensors onto ¼" access ports, 4 coin cell batteries for the sensors, 4 spare batteries, brief instruction sheet, custom foam insert, and the rugged plastic case to transport the kit safely to and from the job site.
4. **What type of device is required to read the sensors?**
   Apple® iOS devices and Google Android OS that have Bluetooth Low Energy capability are able to communicate with the SMART sensors. This includes the Apple iPhone® 4S or newer, iPod® touch Gen5, and iPad® 3 or newer (including Air and Mini), and many Android devices running Android 4.3 or newer. The device must also be updated to the latest operating system.
5. **How do I get the app for my mobile device?**
   You will need to access Apple's App Store® or Google's Play Store and download the free app. It is called SMART Service.
6. **Do I need specific sensors for each mobile OS?**
   No, the same sensors will work with Apple's iOS or Google's Android, but you will need to ensure that your Android device is compatible with Bluetooth Low Energy. Check the specifications of your phone or tablet.
7. **What is Bluetooth Low Energy?**
   Bluetooth SIG, Inc. developed this intelligent, power-friendly version of Bluetooth to enable communications between compact devices and devices you already own. This allowed Sporlan to develop very compact sensors that can "talk" with your SMART device.

   Bluetooth Low Energy is also known as Bluetooth v4.0, BLE, Bluetooth SMART, or Bluetooth SMART Ready.
8. **How do I "pair" the sensors with my mobile device?**
   You simply need to have Bluetooth turned on in the settings of your compatible mobile device. The connection is made within our SMART Service app to keep your sensors organized for automatic reconnection. (Do not pair via the mobile device bluetooth settings)
9. **How do I turn the sensors on and off?**
   On each of the sensors you will find a small, black, water-resistant button. A quick press will turn the sensor "ON." The LED will then begin flashing, indicating that the sensor is on. To turn the sensor "OFF," simply press and hold the button until you see the LED flash quickly, then release. The LED should then remain off. Confirmation is shown on the app screen with a momentary "sensor powered down" banner.

READ IT.
RECORD IT.
SEND IT.

10. What are “Mock Sensors?”

Sporlan placed mock sensors in the app so you can show others how the app works without having the sensors connected to a real system. You probably won’t need this, but you can add mock pressure and temperature sensors by turning on mock sensors in the settings menu. Then touch each sensor icon to connect to them. Finally, tap the default number that shows up for each sensor that flips the screen section. Tap the default numbers and add educated guess numbers in the prompt that pops up. Simply separate your numbers with a space and hit save.

Now you have a simulator in your hand. Try changing your refrigerant selection now and show how quickly you can read a P-T chart. A mock session can also be recorded.

11. Will I need to individually reconnect each sensor to my device every time?

No, if you select “Automatic Reconnect” in the settings section of the SMART Sensor app, your sensors will simply need to be powered on, then hit “Connect All.” All sensors will be connected as you last assigned them.

12. What batteries are required?

Each sensor requires 1 small coin cell to operate - readily available in the CR2450 size. A complete spare set is included in the kit. Place them in the sensor compartment with the positive side (CR2450) facing you.

13. What is the expected battery life?

Battery life will vary with the brand or age of the battery, as well as exposures to extreme temperatures, shock, vibration, etc. Please see Form 140-426 SMART Service Tool Specifications for details.

14. What are the pressure ratings of the sensors?

Please see Form 140-426 SMART Service Tool Specifications for details.

15. What are the temperature ratings of the sensors?

Please see Form 140-426 SMART Service Tool Specifications for details. Note: For the most accurate readings, you should insulate the jaws onto the refrigerant line you are measuring. This is especially important when there is a large difference between the ambient temperature and the refrigerant line temperature.

16. Are the sensors water resistant?

Yes, the temperature and pressure sensors are water resistant. They are not intended to be submerged or exposed to high pressure water sprays. Please see Form 140-426 SMART Service Tool Specifications for details.

17. What is the communication distance range?

Many variables will affect the communication distance. Please see www.bluetooth.com for details on Bluetooth Low Energy.

18. Can multiple mobile devices be connected to the sensors at the same time?

Yes, if you use our newer SMART Pro/R Service Tool app.

No, if you stay with SMART Service Tool app. As soon as the sensors are actively connected to a mobile device, they will not show as “available sensors” on another mobile device. However, once disconnected from the first mobile device, they will become available for any other compatible device. Each sensor that you connect to a compatible device will remain in the mobile device’s SMART Service app memory for future reference.

19. Can I use these SMART sensors with other apps?

No, the sensors are uniquely identified by the SMART Service app and the SMART Pro/R app.

20. Can I use the SMART app with other sensors?

No, the SMART Service app is designed to work with Sporlan SMART sensors.

21. Can I use the same sensor for multiple refrigerants?

Yes. The pressure sensors are made of stainless steel. There are no compatibility issues with most standard refrigerants or oils.

22. What do I need to do when switching types of refrigerant?

The app offers a drop down menu for selecting the next refrigerant. As far as cross-contamination concerns, due to the very small amount of refrigerant in these “hoseless” sensors, you may not need to do anything.

While it may not be required, you could clean the pressure sensors as you would any other gauge or hose that has been connected to an air conditioning or refrigeration system.

23. Is internet access required to use the SMART Sensor app?

While you do need access to the internet to download the free app, you do not need access to perform measuring or recording functions. Obviously, you will need access to e-mail the recorded data from the mobile device. All refrigerant data is embedded into the app so it can calculate superheat and subcooling for you without internet access.

24. How do I update the app?

The app is free on Apple's App Store and Google's Play Store. Depending on your mobile device settings and your access to the internet, you may be notified of an available update. If not, simply go to the correct app store and upgrade. Be sure to e-mail any recorded sessions prior to upgrading or un-installing the app.

25. Can refrigerants be added to the SMART Sensor app?

Sporlan has over 125 refrigerants in the app, but if one is missing, let us know and we can add it to the next app revision.

26. Is there a micron sensor built in?

The pressure sensors do not have an internal micron sensor, but the sensors will not be harmed by pulling them into a vacuum.

27. Do I have to re-zero the sensors every time I use them?

No, the pressure sensors are uniquely identified and the initial offsets are recorded in the app. It doesn't hurt to calibrate, but should rarely be needed. The temperature sensors do not offer automatic zeroing, but they do offer manual calibration within the app. Touch the temperature sensor reading and then type in an offset.

28. Why are there dashes (--) in some of the fields in the display?

Dashes can mean that your phone or tablet is not yet connected to a sensor, a sensor reading is out of range, or you have lost communication with it due to poor signal strength at your mobile device's location. Try to connect, verify you are connected to the system, or move the mobile device closer to the sensor.

29. How can I reconnect to the SMART sensors?

The SMART sensors will "reconnect" in a 5 minute time period. Therefore, if you lose connectivity as you walk to a new location, you may still reconnect and monitor the sensors. One example might be a technician working on a residential heat pump and has sensors connected to the outdoor unit. As the technician walks around and into the house, he/she may lose connectivity, but will likely regain connection in an "in between" location where he/she can monitor both the outdoor and indoor units.

30. Can I connect to a different set of sensors?

It is best to turn off "Automatic Connect" in settings so the app doesn't keep trying to talk to the original set of sensors . . then some options . .

If you just want to connect one sensor in the place of an active one, you can tap the sensor reading, then hit the "X" in the upper right corner of the screen. This will disconnect the sensor. Next, turn off the first sensor and turn on the new one. Finally tap the sensor icon and select the new sensor from the available sensors shown.

To more permanently disconnect from a sensor, simply "Forget" that sensor by tapping the sensor icon at the top, then tap "Forget" next to each sensor you no longer want to communicate with. Then, you simply connect your new sensor by turning it on and tapping the sensor icon on the main screen. The new one will show up as an available sensor.

31. How can I improve the range of Bluetooth Low Energy (Bluetooth SMART)?

Signal strength is reduced as it passes through walls, equipment, etc. You may try moving to a location that offers less obstruction between the sensors and your mobile device. Please see www.bluetooth.com for details on Bluetooth Low Energy.

32. Do the SMART pressure sensors read negative pressures?

No, but they will not be harmed by pulling them into a vacuum. They do not have an internal micron sensor.

33. How do I save my recorded session?

After you have recorded a session and stopped it, the data is automatically saved within the app. You should then e-mail the file to a recipient that can open the ".csv" file for analysis, save it as a permanent record of service, or distribute to others for group diagnosis of the system data. Please know that if you delete the app from your device, all recorded sessions on that device will be deleted.

34. Why won't the recorded session e-mail from my mobile device?

Verify that you have an e-mail account established on your mobile device. Also, make sure you have access to the internet via a Wi-Fi or cellular (3G, 4G, LTE, etc.) connection. If no connection, don't worry, just send the file when you get connected.

35. How do I access a previously recorded session?

Hit the red record button at the top of the screen. You will then see a list of all of your sessions. Tapping on any one of them will provide you options to trash, e-mail, view, or rename that session.

36. How do I open the ".csv" file I sent to my personal computer?

This will depend on the software available on your computer. ".csv" files can typically be opened in text readers, word document software, and in many spreadsheet packages. Sporlan's website provides a template using Microsoft Excel that creates charts utilizing your recorded data.

37. How do I clean the sensors?

The plastic components may be cleaned with a damp cloth and a mild soap solution. Do not use harsh chemicals that will damage plastic. Do not submerge the units as they are not waterproof. The units are dust and water resistant.

Form 140-421 / 52019

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