

## Controls

**Power Button**, Hold for 2 seconds to power On/OFF meter.

**Backlight Button**, On/OFF

**Menu Button**, push to enter menu functions

**Left or Max/Min Button**, Push once to activate and repeat to cycle through options

**Right or Hold Button**, Push once to activate. Push again to deactivate

**Pair Button**, On/Off Wireless BLE Module. When powered on, the wireless module will strobe when searching for smart device. When connected with smart device, symbol will indicate signal strength.



## Display Features

### Temperature Readings:

**T1** Low Side Temperature  
**T2** High Side Temperature  
**°C** Degree Celsius  
**°F** Degree Fahrenheit

### Pressure Readings:

**Lo** Low Side Pressure  
**Hi** High Side Pressure  
**Psig** Pressure (pounds/in<sup>2</sup>)  
**Bar** Pressure (bar)  
**kPa** Pressure (kilo-Pascals)  
**Kg/cm<sup>2</sup>** Pressure (kilograms/centimeter<sup>2</sup>)  
**inHg** Negative Pressure (inches of mercury)  
**cmHg** Negative Pressure (cm of mercury)

**Hold** Value is held  
**Max** Show maximum value in record mode  
**Min** Show minimum value in record mode

**APO** Auto Power Off enabled, Settings; 30 Min., 120 Min. or Manual ON/OFF

**Battery Life indicator**

When powered on, the wireless module will strobe while searching for smart device. When connected with smart device, symbol will indicate wireless connection strength.



## Menu Navigation

**MENU** Menu button accesses Auto Power, Pressure, and Temperature preferences.

**Left/Right** Right and Left buttons navigate menu options.

**Up/Down** Up and Down buttons change the preference in the menu.

**Enter** Enter button selects the preference.



UNBOXING

## Getting Started

1. Install (6) AA batteries by removing the protective rubber boot. Start at the top of the meter and rotate boot around meter to gain access to the rear battery compartment. NOTE: Do not peel back and bend the protective rubber boot as this may stretch and deform the material.



2. Hold the **Power Button** for 2 seconds to power on your new manifold.

3. Connect hoses and temperature clamps to manifold; use the Velcro cable straps to organize the lead wires onto the blue and red hoses. Attach protective padded case and secure to meter with velcro straps.

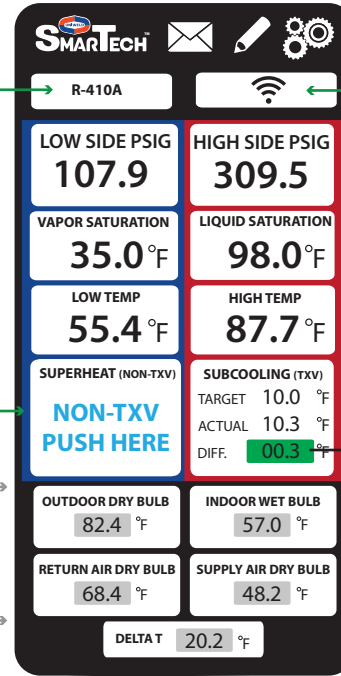
4. Download the free Uniweld SmarTech Digital Manifold app on your compatible smart device from the Google Play Store or the Apple App Store. Open app and send email registration; once completed the app will open and appear on your smart device. You are now ready to **CONNECT** to the SmarTech Manifold.

5. Turn on the SmarTech Manifold and press **CONNECT** on the app. Press **SCAN** and the USMAN device will appear. Press **CONNECT** (wait 5 seconds), your meter will beep once confirming connectivity.

6. Press **HOME** to go back to the Home Screen and view system's real-time pressures, temperatures, Superheat and Subcooling readings. **CONNECT** will change to **CONNECTED** indicating connectivity.

## Home Screen

Select from 109 refrigerant profiles and create saved list



NON-TXV PUSH HERE or TXV PUSH HERE

MANUAL DATA ENTRY

### SMART CHARGE ZONE™

Color coded differential for accurate "In the Zone" system charge.

<b>SUBCOOLING (TXV)</b>	<b>RED ZONE</b>
TARGET 10.0 °F	System is over charged with refrigerant and requires removal of excess refrigerant
ACTUAL 14.6 °F	
DIFF. 4.6 °F	
<b>SUBCOOLING (TXV)</b>	<b>GREEN ZONE</b>
TARGET 10.0 °F	System is properly charged for maximum efficiency and optimal performance
ACTUAL 10.3 °F	
DIFF. 0.3 °F	
<b>SUBCOOLING (TXV)</b>	<b>BLUE ZONE</b>
TARGET 10.0 °F	System is under charged and requires additional refrigerant
ACTUAL 4.2 °F	
DIFF. 5.8 °F	

## Home Screen Icons



Press the SmarTech logo to visit the website for tutorial videos, FAQ, and Resources.



Export a SmarTech Verified Report and email system performance data as a PDF or CSV file that can be easily tracked and saved. Images from the jobsite can be attached to the email for a complete back up report before and after the work is completed.



Enter data for Company Information, Project Details, and Project Notes that will be saved and automatically appear in the SmarTech Verified Report. Project Details and Project Notes must be edited for each job location.



Device Settings for Wireless and Manual Input, Superheat and Subcooling Input, Elevation, Email Preferences, and Update Profile. There are also instructions for restoring the meter to Factory Default, Temperature and Pressure Calibration, and selecting Pressure and Temperature preferences.



Pressing the HOME button will take you back to the Home Screen.



2850 Ravenswood Road, Fort Lauderdale, FL 33312 U.S.A.  
 Customer Service: 800.323.2111 • 954.584.2000 • Fax: 954.587.0109  
 info@uniweld.com • www.uniweld.com

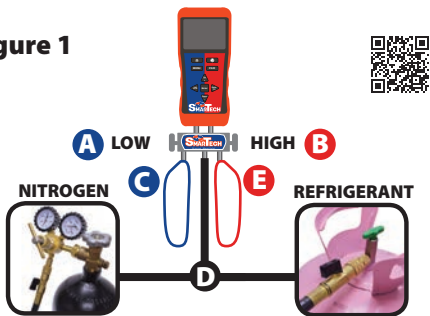
## Manifold and Hoses Leak Test

The SmarTech Digital Manifold is extremely accurate and can be used to pressure test the hoses and manifold valves for leaks. Note: The POE oil used in R410A is very aggressive and causes the rubber seals in the hoses and manifold valve stems to wear rapidly; they may need replacing every couple of months depending on usage. It is recommended to check your manifold and hoses regularly for leaks due to normal wear on rubber gaskets and seats.

### See Figure 1

1. Connect **C** Blue EZ Turn Hose to manifold 45° hose holder fitting.
2. Connect **E** Red EZ Turn Hose to manifold 45° hose holder fitting.
3. Connect **D** Black 3/8" Hose with Ball Valve open to nitrogen regulator using the 3/8"x1/4" adaptor.
4. Open **A** Low Side and **B** High Side manifold valves.
5. Open nitrogen tank valve and set delivery pressure between 400 to 500 psi.
6. Close **D** Black 3/8" Hose Ball Valve. A slight pressure drop is normal as the hoses stretch under pressure but will stabilize after a couple of minutes.
7. Close **A** Low Side and **B** High Side manifold valves.
8. If digital pressure readings are stable the hoses and manifold are functioning properly.
9. If the pressure reading continues to decrease there is a leak in the hoses or manifold that must be repaired. Determine origin of the leak and replace the gaskets and O-rings as needed. Repeat pressure test.

Figure 1



## Discharge and Purge Hoses

Prior to purging the hoses with the refrigerant needed for service it may be necessary to discharge unwanted refrigerant or nitrogen from the hoses.

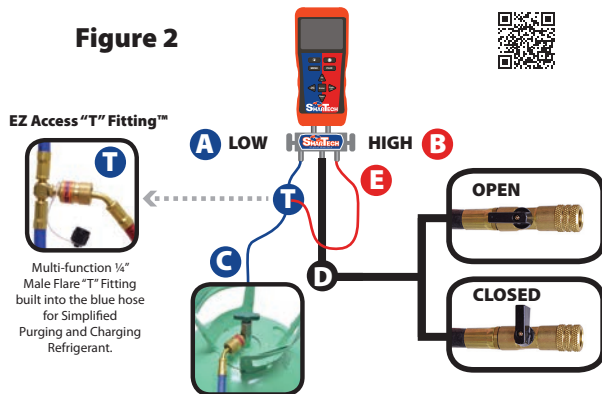
### See Figure 2

1. Open **A** Low Side and **B** High Side manifold valves.
2. Aim the **D** Black 3/8" Hose Ball Valve in a safe direction and open the ball valve to discharge the unwanted refrigerant or nitrogen from the hoses.
3. The digital pressure readings for both Hi and Lo should read zero before continuing to the next step of purging the hoses with refrigerant.
4. Connect **E** Red EZ Turn Hose to **T** Blue Hose EZ Access "T" fitting.
5. Connect **C** Blue EZ Turn Hose to refrigerant cylinder.
6. Close **D** Black 3/8" Hose Ball Valve.
7. Open refrigerant cylinder valve.
8. Aim the **D** Black 3/8" Hose Ball Valve in a safe direction, open ball valve and begin purging non-condensable gases.
9. Close **D** Black 3/8" Hose Ball Valve when all non-condensable gases have been purged.

## Discharge and Purge Hoses

10. Close **A** Low Side and **B** High Side manifold valves.
11. Disconnect **C** Blue EZ Turn Hose from refrigerant cylinder.
12. Disconnect **E** Red EZ Turn Hose from **T** Blue Hose EZ Access "T" fitting.
13. The hoses have now been purged of non-condensable gases with the refrigerant needed for service.

Figure 2



EZ Access "T" Fitting™

Multi-function 1/4" Male Flare "T" Fitting built into the blue hose for Simplified Purging and Charging Refrigerant.

## Pressure Test System

The SmarTech Digital Manifold is extremely accurate and can be used to pressure test the system for leaks. Prior to pressure testing with nitrogen it may be necessary to discharge unwanted refrigerant from the hoses.

### See Figure 3

1. Open **A** Low Side and **B** High Side manifold valves.
2. Aim the **D** Black 3/8" Hose Ball Valve in a safe direction and open the ball valve to discharge the unwanted refrigerant from the hoses.
3. The digital pressure readings for both Hi and Lo should read zero before continuing to the next step.
4. Connect **E** Red EZ Turn Hose to **F** High Side service fitting.
5. Connect **C** Blue EZ Turn Hose to **G** Low Side service fitting.
6. Connect **D** Black 3/8" Hose with Ball Valve open to nitrogen regulator using the 3/8"x1/4" adaptor.
7. Open nitrogen tank valve and set delivery pressure to system manufacturer's recommended test pressure.
8. Close **D** Black 3/8" Hose Ball Valve. A slight pressure drop is normal as the hoses stretch under pressure but will stabilize after a couple of minutes.
9. Close **A** Low Side and **B** High Side manifold valves.
10. If after a few minutes the pressure reading continues to decrease there is a system leak. The leak must be repaired then repeat the system pressure test.
11. If after a few minutes the digital pressure readings are stable the system is leak-free.
12. Close the nitrogen cylinder valve.
13. Disconnect **D** Black 3/8" Hose from the nitrogen regulator.
14. Open **A** Low Side and **B** High Side manifold valves.
15. Aim the **D** Black 3/8" Hose Ball Valve in a safe direction and open the ball valve to discharge the nitrogen from the system and hoses.
16. Proceed with evacuating the system.

## Evacuating System

Prior to evacuating the system it may be necessary to discharge unwanted nitrogen or refrigerant from the hoses, see Discharge & Purge Hoses steps 1-2 before proceeding.

### See Figure 3

1. Connect **E** Red EZ Turn Hose to **F** High Side service fitting.
2. Connect **C** Blue EZ Turn Hose to **G** Low Side service fitting.
3. Optional: Connect (Uniweld Part# UVG) Digital Vacuum Gauge to **T** Blue Hose EZ Access "T" fitting.
4. Open **A** Low Side and **B** High Side manifold valves.
5. Connect **D** Black 3/8" Hose with Ball Valve open to vacuum pump.
6. Evacuate system according to manufacturer's specification.
7. Close **A** Low Side and **B** High Side manifold valves.
8. Close **D** Black 3/8" Hose Ball Valve and disconnect from the vacuum pump.
9. Turn vacuum pump off and proceed with charging system with refrigerant.

## Charging System

Prior to charging a system with refrigerant the hoses must be evacuated or purged with the refrigerant needed for service, see Discharge and Purge Hoses before proceeding.

### See Figure 3

1. Turn system off and connect **E** Red EZ Turn Hose to **F** High Side service fitting.
2. Attach **H** Red Temperature Clamp to **F** High Side copper tubing.
3. Connect **C** Blue EZ Turn Hose to **G** Low Side service fitting.
4. Attach **J** Blue Temperature Clamp to **G** Low Side copper tubing.
5. Connect **D** Black 3/8" Hose with Ball Valve closed to refrigerant cylinder.
6. If this is a new system installation, open **F** High Side and **G** Low Side condenser service valves.
7. Open **D** Black 3/8" Hose with Ball Valve and refrigerant cylinder valve.
8. Turn system on; SmarTech Superheat and Subcooling features can be used at this time to properly charge the system for maximum efficiency and optimal performance.
9. To add refrigerant open **A** Low Side manifold valve.
10. Close **A** Low Side manifold valve and let the system temperatures and pressures stabilize. Check Superheat and Subcooling "Smart Charge Zone"; if additional refrigerant is needed repeat steps 9 and 10 until the "Smart Charge Zone" is "Green".
11. Close **A** Low Side manifold valve when desired amount of refrigerant has been added.
12. Close **D** Black 3/8" Hose Ball Valve and refrigerant cylinder valve.
13. Disconnect **D** Black 3/8" Hose with Ball Valve from refrigerant cylinder and connect to manifold hose holder fitting.
14. Disconnect **E** Red EZ Turn Hose and **C** Blue EZ Turn Hose from system and connect to manifold hose holder fittings.

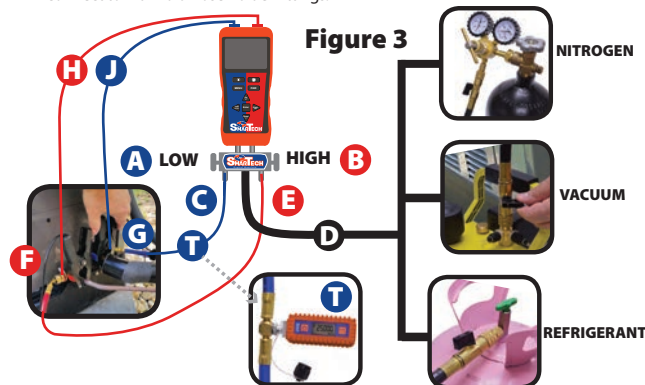


Figure 3



## Uniweld SmarTech Wireless Digital Manifold

### USER MANUAL - PART# USMAN5

**FOR USE BY PROFESSIONALS.** This manifold is designed for use by technically trained refrigeration and air conditioning service technicians, due to the unusually **HIGH PRESSURE AND HAZARDOUS GASES IN ALL SYSTEMS**, misapplication could result in injury or death. The manufacturer warns against the sale of this product to, or its use by, other than professional trained personnel.

▼ **WARNING:** Read carefully and completely before using equipment. Keep for reference and store in back of protective case.

▼ **WARNING:** Always wear safety goggles when working with refrigerants.

▼ **WARNING: CALIFORNIA PROPOSITION 65:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm



### Package Contents

1. SmarTech Wireless Digital Manifold w/ Rubber Boot
2. (1) Blue and (1) Red Temperature Clamp K-Type with 6 Ft. lead
3. (2) Thermocouple Bead Probes K-Type
4. (1) Red 5 Ft. EZ Turn® Anti-Blowback Hose
5. (1) Blue 5 Ft. EZ Turn® Anti-Blowback Hose with 1/4" EZ Access "T" Fitting™
6. (1) Black 5 Ft. Fast-Flo 3/8" Vacuum & Charging Hose with Ball Valve
7. (1) Adaptor 3/8" MF x 1/4" FF
8. SmarTech Protective Padded Case
9. (6) AA Batteries (not shown)
10. (10) Velcro Cable Tie Straps