



CORE-550-BLE

Bluetooth digital manifold



User guide

1. PRODUCT DESCRIPTION

1.1 INTRODUCTION

We thank you for purchasing our digital manifold CORE-550-BLE and kindly ask you to carefully read this user manual in order to familiarize yourself with the handling of the device. CORE-550-BLE integrates all the essential functions to assist you during commissioning and maintenance of AC/R systems including: a pressure-temperature mode (P/T), a vacuum mode (VAC) and a leak test mode (HOLD).

1.2 GENERAL OVERVIEW



- | | |
|------------------------------------|------------------------|
| 1. Temperature probe interfaces | 2. LCD screen |
| 3. Control buttons | 4. Indicator light |
| 5. LP and HP valves | 6. Charging hose ports |
| 7. 1/4" SAE charging hose fittings | 8. Magnetic hook |
| 9. Battery compartment (3x AA) | |

1.3 FUNCTIONS

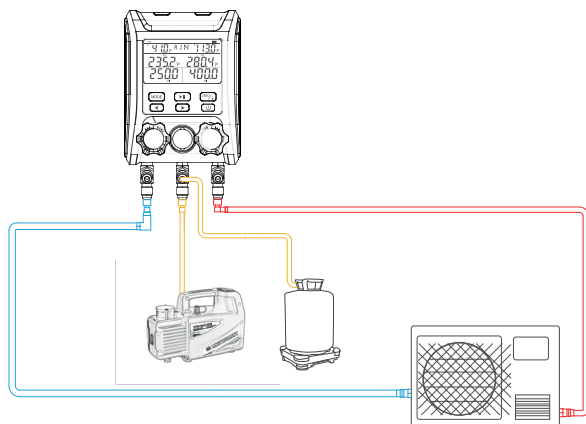
Power button 	1. Short press: switch the device on or off 2. Short press: switch Bluetooth on or off
Mode 	1. Short press: in P/T mode allows changing the display 2. Long press: allows entering the settings
Backlight/Zero 	1. Short press: turns the backlight on/off 2. Long press: zeroing of the pressure sensors to ambient pressure
Start/Pause 	In HOLD mode, allows starting/ stopping the leak test
Left/Right arrows 	1. In P/T mode: allows changing the gas slowly (short press) or quickly (long press) 2. In the settings: allows changing the unit
Simultaneous buttons 	Allows switching from one of the three modes to another: P/T => VAC => HOLD or in the reverse direction
Combined buttons 	Allows adjusting the backlight intensity according to 3 levels

1.4 SPECIFICATIONS

Measurement range	Pressure: -14.5 to 800 psi	Temp: -40 to+150°C
Accuracy	Pressure: ±0.5% FS	Temp: ±0,5°C
Resolution	Pressure: 0.5 psi	Temp: 0,1°C
Units	Pressure: psi, kg/cm2, kPa, Mpa, bar	Temp: °F/°C
Refrigerants	18 types (refrigerants selected via smartphone application)	
Power supply	3x AA	

Display	High-contrast LC screen	
Battery life	200h	
Operating range	-10 à + 50°C	

2. QUICK START GUIDE



1. Press and hold the button  to switch on the device
2. The device starts in P/T mode. Press and hold the two arrows simultaneously to change the gas.
3. Connect the LP and HP ports of CORE-550 to the system according to the diagram below.
4. Positionner (si besoin) les pinces de températures de manière adéquate sur les tubes cuivre du système.
5. The pressures, temperatures, superheat (SH) and subcooling (SC) are displayed in real time.

3. INSTRUCTIONS

3.1 PREPARATION

1. Connection of the temperature probe
 - ⚠ The temperature probe must always be connected to CORE-550-BLE before taking a measurement. It will be automatically recognized once the device is switched on.
2. Press the ON/OFF button to start CORE-550-BLE and open P/T mode (figure 1)
3. Perform a long press on the ZERO button  to zero the pressure sensors
 - ⚠ the sensors must always be zeroed before each use
 - ⚠ Before performing the zeroing make sure that the sensors are exposed to ambient pressure.
4. Select the gas using the arrows  and 
- ⚠ The gas can only be selected in P/T mode and in the sub-mode displaying the saturation temperatures VSAT and LSAT (figure 1)

3.2 P/T MODE (pressures and temperatures)

1. Once the gas is selected, the screen displays in real time the values of the LP and HP pressures, the corresponding saturation temperatures VSAT and LSAT (figure 1) as well as the probe temperatures TLow and THigh

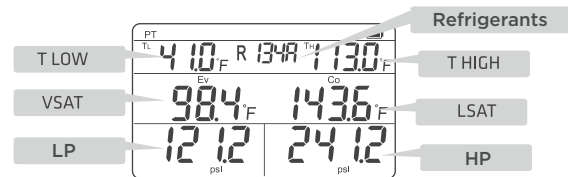


Fig. 1 P/T mode with saturation temperatures

2. Press **MODE** to display the superheat and subcooling sub-mode. The interface (Figure 2) then displays the measured pressures, the probe temperatures TLow and THigh, the superheat and the subcooling.

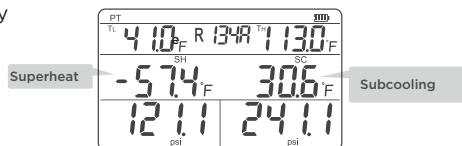
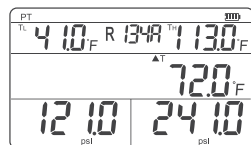


Fig. 1 P/T mode with saturation temperatures

3. Press **MODE** to display the temperature difference sub-mode. The interface (Figure 3) then displays the measured pressures, the probe temperatures TLow and THigh, and the temperature difference ΔT .

Fig. 3 P/T Mode with ΔT display

3.3 VAC MODE (VACUUM)

1. Make sure that the HP sensor is connected to the system because it is the one that measures the vacuum in the system.
2. Verify that the automatic stop parameter of the device is set to OFF.
3. Properly perform ZEROing of the pressure sensors by pressing **ZERO** for a long time.
4. Press simultaneously **MODE** and **▶** in P/T mode to enter VAC mode.
5. Start the vacuum pump to begin evacuating the system.
6. When the system pressure drops below atmospheric pressure (= pressure lower than 0), the screen then displays the percentage of vacuum achieved, otherwise the indication "----" is displayed.
7. The interface (Figure 4) displays the system pressure and the percentage of vacuum achieved as well as the vacuum duration, which starts when VAC mode is opened.

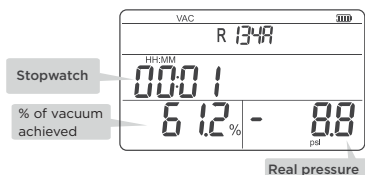


Fig. 4 VAC mode

Note : The time required to properly evacuate the system naturally depends on ambient conditions, system size, and the capacity of the vacuum pump. When the CORE-550-BLE manifold displays a vacuum percentage of 96 to 100%, it means that the vacuum level reached is below 10 mbar (approximately 8000 microns). We therefore recommend continuing the vacuum for at least 2 hours from the moment the manifold displays 100% to ensure the proper vacuum is reached. You can also additionally use a digital vacuum gauge such as VGV-760 to measure the actual system vacuum to the micron.

3.4 HOLD MODE (LEAK TEST)

1. Make sure that the HP sensor of the CORE-550-BLE manifold is in contact with the system pressure, because it is this sensor that allows the leak test.
2. Perform ZEROing of the sensors by pressing the button for a long time.
3. Press simultaneously the buttons **MODE** and **▶** from VAC mode (or twice from P/T mode) to enter HOLD mode.
4. Press **▶** to start the test. The icon **■** appears and the timer starts. The initial pressure is displayed at the bottom left and the actual pressure at the bottom right. The pressure difference P in absolute value (positive) is displayed on the screen and allows monitoring the evolution of the system pressure (Figure 5). By default, the test duration is set to 48h. At the end of this time, the device will display whether the test has failed (FAIL) or succeeded (SUCC). The test duration can be changed via the AI TOOLS smartphone application. The test is considered successful if the pressure value does not drop more than 1% at the end of the period. This percentage can be modified in the AI TOOLS application.
5. To end the test, press and hold **▶**. The icon **▶** then appears, and the data is reset for a new test. (Figure 6)

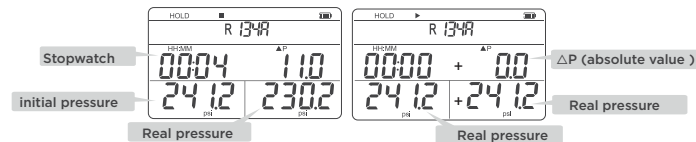


Fig. 5 HOLD Mode Fig. 6 Test stop and data reset

Note : When the "Hold" parameter is ON (see paragraph 3.7), this means that temperature compensation is activated during the leak test. In this case, the pressure displayed at the bottom right (Figure 5) is no longer the actual pressure measured by the sensor, but the temperature-compensated pressure value according to Gay-Lussac's law.

CORE-550-BLE uses an integrated ambient temperature sensor to calculate the compensated pressure. It should be noted that the resolution of the pressure sensor may in certain cases generate a very small ΔP (up to 0.04 bar) at the start of the test without this meaning the presence of a leak.

Finally, it is important to always stabilize the temperature of the manifold for at least 10 minutes before carrying out a leak test with temperature compensation, particularly when for example the device has been stored overnight in a van.

3.5 UNIT SETTINGS

1. Press and hold **MODE** to enter the parameter setting interface (Figure 7)
2. Press the arrows **◀** and **▶** to change the temperature unit
3. Press **MODE**, then press the arrows **◀** and **▶** to select the pressure unit (Figure 8)
4. Press and hold **MODE** to exit the settings mode

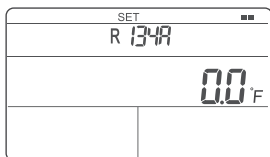


Fig. 7 Temperature unit setting

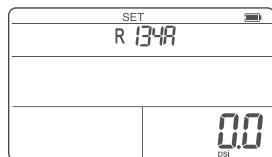


Fig. 8 Pressure unit setting

3.6 AUTO SHUT-OFF

1. In any mode, press and hold **MODE** to enter the settings mode
2. Press **MODE** twice in succession to go to the auto shut-off setting interface (Figure 9)
3. With the arrows **◀** and **▶** choose the time before automatic shut-off of the device: 5, 10, 15, 30 or 60 min (Figure 10)

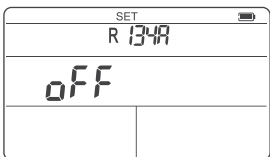


Fig. 9 Auto shut-off setting

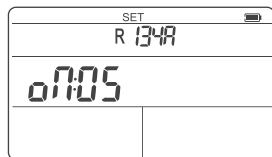


Fig. 10 Time selection

3.7 TEMPERATURE COMPENSATION

1. In any mode press and hold **MODE** to enter the setting interface
2. Press the **MODE** button 3 times in succession to go to the temperature compensation setting interface (Figure 11) and select with the arrows **◀** and **▶** the activation (ON) or the deactivation (OFF) of this function.

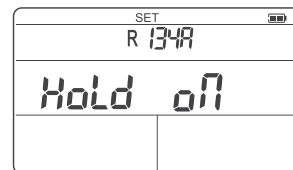


Fig. 11 Temperature compensation

4. MAINTENANCE

4.1 BATTERY REPLACEMENT

1. Switch off the device beforehand
2. Unscrew the screws and remove the battery protection cover
3. Replace the 3 used batteries with new AA type batteries
4. Put the cover back and tighten the screws



⚠ It is recommended to remove the batteries when the device is not used for a long period in order to prevent them from leaking and damaging the product.

4.2 PRODUCT CLEANING

If the device housing is soiled, clean with a soft cloth.

⚠ Do not use detergents or solvents to clean the device.

5. TIPS AND HELP

5.1 DESCRIPTION OF SYMBOLS

Problems	Description
PT	Pressure / temperature mode
TL	Temperature probe measurement LP side
TH	Temperature probe measurement HP side
T	Temperature Difference TH-TL
Ev	Vapor saturation temperature Vsat
Co	Liquid saturation temperature Lsat
SH	Superheat
SC	Subcooling
VAC	Vacuum mode
HH: MM	Stopwatch
HOLD	Leak test mode
P	Pressure difference real pressure - initial pressure
SET	Settings mode
Off	Auto shut-off OFF
On	Auto shut-off ON
■	Stops the leak test
▶	Starts the leak test

5.2 PROBLEMS AND SOLUTIONS

Problems	-Possible causes -Solutions
The battery indicator flashes	- The batteries are depleted - Replace the batteries
Auto shut-off of the device	- The batteries are depleted - Replace the batteries
The temperature displays: ----	- The temperature probe is not connected or the temperature is below the lower limit of the operating range - Connect the temperature probe or keep the temperature within the specified range
The temperature displays: -OL-	- The temperature is higher than the specified maximum temperature - Keep the temperature within the specified range
The pressure displays: -OL-	-- The temperature is higher than the specified maximum temperature - Keep the pressure within the specified range

THE SELECTION AND THE UPDATE OF REFRIGERANTS IS DONE WITH THE **AI TOOLS APPLICATION**.



SMARTPHONE APPLICATION AI TOOLS

Download the application available on the stores in ANDROID and IOS versions and access the functions below:

- Update and selection of refrigerants in the device
- Data recording
- Creation of reports and graphs
- ...



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