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UNI-T®

UT336E KIT
Digital Manifold Gauge with Wireless Temperature Clamps
User Manual

PREFACE

Thank you for purchasing the new Digital Manifold Gauge. In order to use this product safely and correctly, please read this User Manual thoroughly, especially the Safety part. After reading this guideline, it is recommended to keep the manual and product at an easily accessible place, preferably close to the device, for future reference.

LIMITED WARRANTY AND LIABILITY

Uni-Trend guarantees that the product is free from any defect in material and workmanship within one year since the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination and improper handling. The dealer shall not be entitled to give any other warranty on behalf of Uni-Trend. If you need warranty service within the warranty period, please contact your seller directly.

This warranty is the only compensation you can obtain. Besides, Uni-Trend does not provide any express or implied warranty, e.g. an implied warranty for some particular purpose. Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by any reason or speculation. As some areas or countries do not allow limitations on implied warranties and incidental or subsequent damage, the above limitation of liability and stipulation may not apply to you.

Content

1. Introduction

The UT336E Digital Manifold Gauge (also called AC Diagnoser) integrates functions of pressure and temperature measurement, mainly used for leak detections of refrigeration system (Pressure Holding Method), refrigerant charging, and the troubleshooting and maintenance of refrigeration system.

2. Features

- Equipped with a 3.5-inch TFT color screen, analog dial design, and attractive UI for measurement display and status.
- Dual-channel pressure measurement, Dual-channel temperature measurement (used with UT320i wireless temperature clamp).
- Support 4 test mode:Refrigeration,Evacuation,Pressure Test,Delta T.
- UT336E supports IP54 protection, while UT320i supports IP65 protection.
- Support mobile APPs for data viewing and report exporting.
- Built-in a database of 160+ refrigerants and with mobile APP updates. Automatically calculate the superheat (SH) and subcooling (SC) according to the Evaporation Temperature (Ev) and Condensation Temperature (Co) from database at current pressures.
- Rechargeable lithium battery.
- Auto screen off, with tap-to-wake backlight function.
- Maximum 10,000 data storage.

3. Configuration

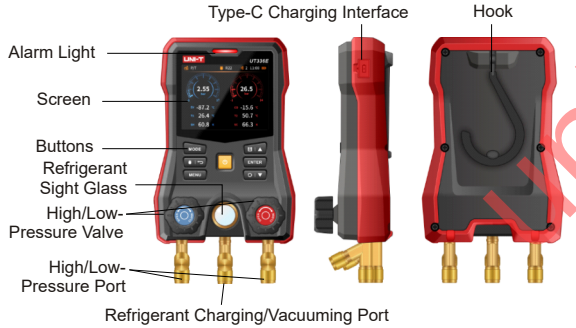
UT336E Digital Manifold Gauge ---------- 1
UT320i Wireless Temperature Clamp ---------- 2
User Manual---------- 2
Safety Guide---------- 1
Download Guide of Common Files ---------- 1
Refrigerant Hose ---------- 3
USB-C Charging Cable ---------- 1
Tool Box---------- 1
Please contact your dealer directly if any components are missing or damaged.

4.Safety

Read the Safety carefully before you use the device.

- Please read instructions carefully and follow them before you start the measurement.
- UT336E is incompatible with refrigerants containing ammonia and must not be used together with ammonia refrigerants.
- Check the device and accessories before you use the device. Replace a new refrigerant hose when it gets broken by dropping or other damages. If the high/low-pressure valves are damaged, or the housing of device is damaged or no screen display occurs, do not continue to use the device.
- Do not disassemble or change the internal wires of device randomly.
- When the low battery icon shows on the screen, charge the battery to ensure its normal use and accurate measurement.
- Please charge the device using a standard DC 5V adapter. Do not use power supplies or adapters with other voltages, may cause damage.
- Do not store or use the device in high-temperature, high-humidity, flammable, explosive, or strong electromagnetic environments.
- Use soft cloth and neutral detergent to clean the housing of device. Do not use abrasives and solvents to avoid housing corrosion and device damage.

5. Buttons



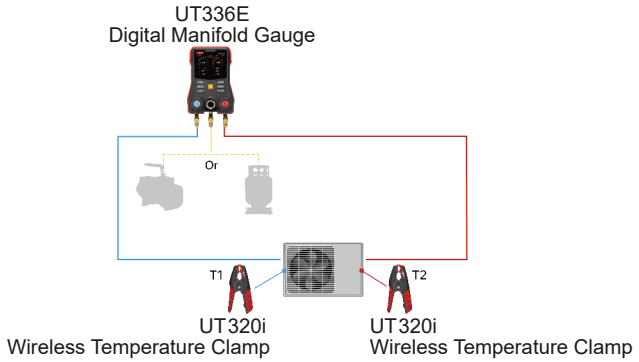
High/Low-Pressure Port: 1/4 SAE refrigerant hose connection; connect a blue hose to the left-side port (low-pressure port); connect a red hose to the right-side port (high-pressure port).
Refrigerant Charging/Vacuuming Port: 1/4 SAE refrigerant hose connection, connect a yellow hose.

Button Details:

Buttons		Short Press	Long Press
MODE	Mode	Enter/Exit Mode Switching	x
	Refrigerant/Return	Refrigerant/Menu Return	x
MENU	Menu Setting	Enter/Exit the setting	x
	Power On/Off	x	Power on/off
	Record/UP	Start or stop recording/ Scroll up	Scroll up fast
ENTER	Confirm	Confirm	x
	Zeroing/DOWN	Scroll down	Zeroing/ Scroll down fast

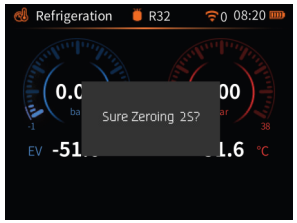
6. Operations

1) Quick Operations



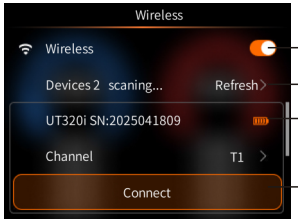
1. Long press POWER button to power on the device.
2. Enter the Refrigeration mode and short press to select a refrigerant.
3. Press and hold the Zeroing button for 3 seconds for sensor zeroing.
4. Connect the high-low pressure ports of the device to the measured system using refrigerant hoses.
5. Rotate the high-low pressure valves clockwise to close.
6. Clamp the wireless temperature clamp to the pipelines of the measured system.
7. When adding refrigerant, connect a refrigerant tank to the middle port; when evacuating, connect a vacuum pump to the middle port.
8. Start the measured system, and now you can monitor the real-time changes of pressure, temperature, saturation temperature, and other parameters at the high and low pressure of the system.

2) Zeroing



①. Long press Zeroing button
②. Zeoring or Not?
③. Zeoring Done (after 3s)

3) Wireless Temperature Clamp UT320i Pairing

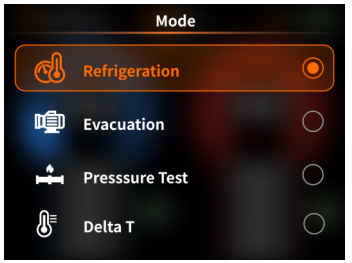


Wireless Connection ON/OFF
Available Devices: Tap here to refresh list
Current device search information.
Tap here to disconnect/connect device.

①. Short press Menu button
②. Select wireless options
③. Follow the instructions above.

- Select the device you want to connect in the wireless connection options, e.g. the UT320i Wireless Temperature Clamp and the UT336V Wireless Vacuum Gauge.
- After the connection, recorded as a historical connection and automatically connect at next time.
- After connecting UT320i Wireless Temperature Clamp, tap the 'Channel' to select T1 or T2.
- The UT336E device only supports simultaneous connection of two UT320i Wireless Temperature Clamps and one UT336V Wireless Vacuum Gauge. To connect a new device, please manually disconnect the currently connected device first.

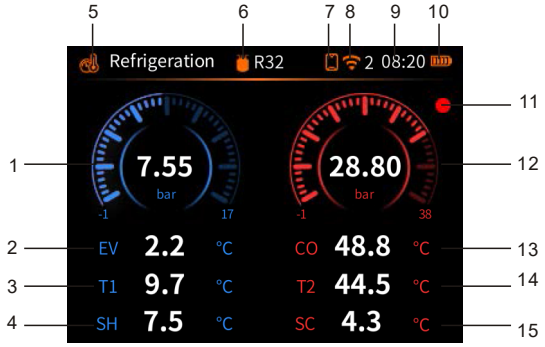
4) Mode Selection



①. Short press Mode button
②. Select one mode and confirm

7. Modes

1) Refrigeration Mode



1	Low Pressure Value
2	Evaporation Temperature
3	Measured Temperature T1
4	Superheat
5	Refrigeration Mode
6	Refrigerant Type
7	Mobile Connection Icon
8	Wireless Connection Icon & Connected Slave Devices
9	Time
10	Battery Icon
11	Data Record Icon
12	High Pressure Value
13	Condensation Temperature
14	Measured Temperature T2
15	Subcooling

EV/CO:
Evaporation and condensation temperatures are automatically calculated based on the refrigerant's physical properties at different pressures.
T1/T2:
The measured surface temperatures of the low-pressure and high-pressure copper tubes
SH/SC: Superheat SH = T1-EV, Subcooling SC = CO-T2.

Operation Details:

①. Long press POWER button to power on the device.
②. Enter the Refrigeration mode and short press to select a refrigerant.
③. Press and hold the Zeroing button for 3 seconds for sensor zeroing.
④. Connect the high-low pressure ports of the device to the measured system using refrigerant hoses.
⑤. Rotate the high-low pressure valves clockwise to close.
⑥. Enter the wireless connection Setting interface to connect wireless temperature clamp T1 and T2 (if already connected, they will automatically connect after power-on).
⑦. Clamp the wireless temperature clamp to the pipelines of the measured system.
⑧. Start the measured system, and now you can monitor the real-time changes of pressure, temperature, saturation temperature, and other parameters.

2) Evacuation Mode

Operation Details:

1. Long press POWER button to power on the device.
2. Enter the Refrigeration mode, zeroing the sensor.
3. Short press MODE button to select the Evacuation mode.
4. Connect the device's high-pressure (right side) port to the system requiring evacuation.(The high-pressure channel is for evacuation test)
5. Connect the device's vacuum (middle) port to the vacuum pump.
6. Rotate the high-pressure valve counter-clockwise to open.
7. Tap 'Confirm' to begin vacuuming, and the device starts to record the operation time. The vacuum percentage will display once the system pressure is negative; otherwise, it will show 0.

Note:

The evacuation function is using a non-professional vacuum sensor, and only for monitoring the vacuum status of system roughly. For accurate vacuum measurement, please use the UT336V Wireless Vacuum Gauge.

3) Connect UT336V Vacuum Gauge in Evacuation Mode

4) Pressure Test Mode

Operation Details:

①.Long press POWER button to power on the device.

②.Enter the Refrigeration mode, zeroing the sensor.

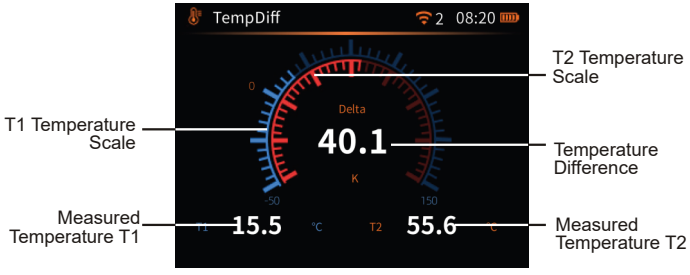
③.Short press MODE button to select the Pressure test mode.

④.Connect the device's high-pressure (right side) port to the measured system. (The high-pressure channel is for pressure test.)

⑤.Rotate the high- pressure valves clockwise to close.

⑥.Tap 'Confirm' button to start the pressure test, and the device will record the initial pressure, marking it with a triangle icon on the scale. Start to record the operation time, and the scale will turn yellow if the system leaks.

5) Delta T Mode



Operation Details:

①. Long press POWER button ⏻ to power on the device.

②. Short press MODE button to select the Delta T mode.

③. Enter the wireless connection options to connect wireless temperature clamp UT320i T1 and T2. (if already connected, they will automatically connect after power-on)

④. Clamp the wireless temperature clamp to the pipelines of the measured system, showing the measured T1, T2 and temperature difference value.

8. Specification

Pressure Range/ Resolution	-1.00~+60.00 bar	0.01 bar
	-100~+6000 kPa	1 kPa
	-0.100~+6.000 MPa	0.001 MPa
	-14.5~+870.2 psi	0.1 psi
	-1.02~+61.18 kgcm²	0.01 kgcm²
	-75.0 to 4500 cmHg	0.1 cmHg
	-29.5 to 1771 inHg	0.1 inHg
Temperature Range/ Resolution	-50~150℃	0.1℃
	-58 -302℉	0.1℉
Pressure Accuracy	±0.5% FS	
Temperature Accuracy	±0.5℃ (-50~80℃) ±1℃ for other	
Unit Memory	The device will remember your last unit selection when it starts up.	
Alarm	Yellow LED/Buzzer alarm, the alarm threshold can be set.	
Wireless Function	Can be connected with two UT320i, one UT336V and a mobile app simultaneously, range of up to 100 meters in open spaces.	
IP Rating	UT336E:IP54; UT320i: IP65	
Measurement Modes	Refrigeration, Evacuation, Pressure Test, Delta T	
Refrigerant Type	162, mobile APP can preset 10 common refrigerant types.	

Evaporation & Condensation Temperature	√
High/Low-Pressure Measurement	√
Superheat/Subcooling	√
Pressure Zeroing	√
Refrigeration/Heat Pump Mode	√
Data Record	Maximum 10000, the record interval can be set.
Temperature Compensation	Support, suitable for pressure holding mode. With this function ON, it compensates for the temperature changes on the pressure sensor of device.
Auto Screen Off	1/5/10minute can be set. It can be canceled, and it supports tapping to wake up the screen.
Auto Power Off	Auto power off after 15 or 30 minutes if no operations, can be set or canceled.
Battery	Built-in rechargeable lithium battery: 3.7V 5200mAh
Charging Voltage	5V 2A
Charge Time & LED Indication	About 4.5 hours, LED in red indicates charging, while solid green indicates fully charged.
Battery Life	> 30h, (backlight 50%, wireless connection OFF)
Working Temperature & Humidity	-20 50℃ 90%RH (non-condensing)
Storage Temperature & Humidity	-20 60℃ 90%RH (non-condensing)
Altitude	≤2000m
EMC Standard	EN 61326-1:2021(Class A)
Size	UT336E: 203×117×70mm; UT320i: 156×79×40mm
Weight	UT336E: ~836g; UT320i: ~156g

- **Built-in 160+ refrigerants**

Prior to the release of this manual, 162 types of refrigerants had been cataloged in the database:

R11	R1123	R113	R114	R115	R1150
R116	R12	R1216	R123	R1233ZDE	R1234YF
R1234ZEE	R1234ZEZ	R124	R1243ZF	R125	R1270
R13	R134A	R14	R141B	R142B	R143A
R150	R152A	R161	R170	R21	R218
R22	R227EA	R23	R236EA	R236FA	R245CA
R245FA	R290	R32	R40	R401A	R401B
R401C	R402A	R402B	R403A	R403B	R404A
R405A	R406A	R407A	R407B	R407C	R407D
R407E	R407F	R407G	R407H	R408A	R409A
R409B	R41	R410A	R410B	R411A	R411B
R412A	R413A	R414A	R414B	R415A	R415B
R416A	R417A	R417B	R417C	R418A	R419A
R419B	R420A	R421A	R421B	R422A	R422B
R422C	R422D	R422E	R423A	R424A	R425A
R426A	R427A	R428A	R429A	R430A	R431A
R432A	R433A	R433B	R433C	R434A	R435A
R436A	R436B	R437A	R438A	R439A	R440A
R441A	R442A	R443A	R444A	R444B	R445A
R446A	R447A	R447B	R448A	R449A	R449B
R449C	R450A	R451A	R451B	R452A	R452B
R452C	R453A	R454A	R454B	R454C	R455A
R456A	R457A	R458A	R459A	R459B	R460A
R460B	R466A	R469A	R50	R500	R501
R502	R503	R504	R507A	R508A	R508B
R509A	R510A	R511A	R512A	R513A	R513B
R515A	R600	R600A	R601A	R718	R744

9. Mobile APP Download

Download the mobile app iENV in the following ways:
a) For iOS, search and download iENV in the App Store.
b) For Android, search and download iENV in the Google Play.

10. Maintenance

1) Operating Environment: UT336E/UT320i are a precision instruments. To ensure its measurement accuracy, please keep it strictly away from impacts, severe shocks, moisture, strong electric fields, magnetic fields, oil, and dusty environments.
2) Case Cleaning: Alcohol and thinners are corrosive to the case, especially the LCD screen. Please gently wipe it with a little clean water.

The User Manual is subject to change without prior notice!

Due to different batches, the materials and details of actual products may be slightly different from the graphic information, please refer to the actual product received. Experimental data provided in the page is from internal laboratory of UNI-T, but it should not be a reference for customer to place orders. Any questions, please contact the customer service, thanks!