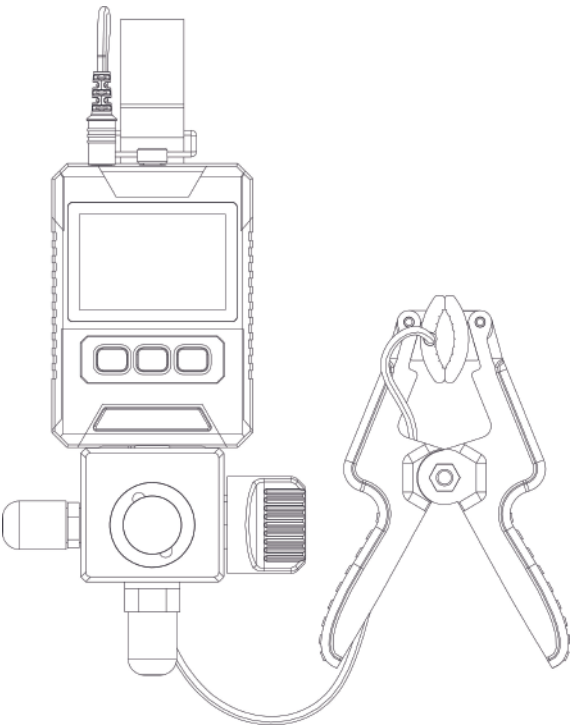


RVG-10 DIGITAL MANIFOLD

OPERATING INSTRUCTIONS

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1. ABOUT THIS DOCUMENT

The instruction manual is an integral part of the instrument, Please read this documentation carefully and familiarize yourself with the product before putting it to use.
Pay particular attention to the safety instructions and warning advice in order to prevent injury and damage to the product.

Symbols and writing standards

ⓘ Indicates a reminder or further description of a feature

⚠ **Warning:** Serious physical injury may occur.

⚠ **Danger:** Minor physical injury or damage to the equipment may occur.

2. ENSURE SAFETY

- Do not operate the instrument if there are signs of damage at the housing or hoses.
- Do not perform contact measurements on non-insulated, live parts.
- Do not store the product together with solvents. Do not use any desiccants.
- Dangers may also arise from the refrigeration systems being measured or the measuring environment: Note the safety regulations valid in your area when performing the measurements.
- If the measuring instrument falls or another comparable mechanical load occurs, may cause breakage of the filling tube and damage to the control valve. To ensure safety, replace the filling tube with a new one and check the condition of the instrument.

3. OPERATING ENVIRONMENT

- The instruments are digital refrigerant meters for the maintenance and servicing of refrigeration systems and heat pumps. They should only be carried out by qualified or trained personnel.
- The instruments are compatible with most noncorrosive refrigerants, water and glycol.
- The instruments are not compatible with refrigerants containing ammonia.
- The products must not be used in potentially explosive atmospheres!

4.PRODUCT DESCRIPTION

4.1 PARAMETER

Pressure measurement range	-14.5~800psi
Pressure display resolution	0.5psi
Pressure measurement accuracy	±0.5%FS
Pressure unit	kPa、MPa、psi、inHg、bar、kg/cm^2
Temperature measurement range	-50°C~150°C
Pressure display resolution	0.1°C
Temperature measurement accuracy	±0.5°C
Temperature unit	°C、°F
operating temperature	-10°C~50°C

ⓘ measurement target exceeding the range is displayed as ----

4.2 BUTTON FUNCTION

	press	long press
	• Arrow Key • Change of refrigerant (SH/SC Measuring interface) • Other functions: follow the on-screen prompts	Pressure zeroing
	• Arrow Key • Change of refrigerant (SH/SC Measuring interface) • Other functions: follow the on-screen prompts	Turn on the backlight
	• Turn on the device • Open the Functions menu • Confirm your selection	Turn Off the device

ⓘ Pressure zeroing should be carried out when the instrument is not connected to the target system and the instrument measurement interface is connected to the atmosphere, incorrect zeroing will make the measurement data inaccurate, if misuse follow the correct method to re-zero can be restored to normal.

4.3 ICON DESCRIPTION

	Temperature probe connected
	Auto Power Off
	Batery level Display  when the instrument is almost empty and the battery must be replaced as soon as possible.

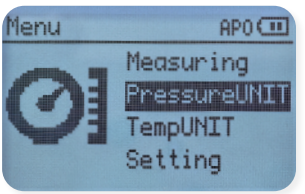
5.SETTING BEFORE USE

5.1 UNIT OF MEASURE

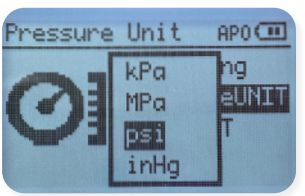
The unit of measure has a memory function and does not need to be reset after switching on or off. Also, to make it easier to change the unit of measure during use, the option to set the unit of measure is placed in the first page of the menu.

Press the [Enter] key to open the menu

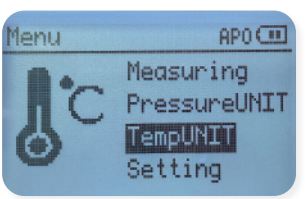
Press the [▲]/[▼] key to select Pressure UNIT and press the [Enter] key to confirm.



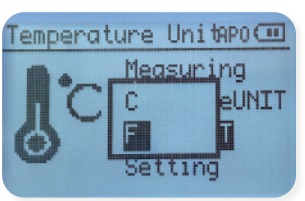
Press the [▲]/[▼] key to select in the pressure unit menu and press the [Enter] key to confirm.



Press the [▲]/[▼] key to select Temp UNIT and press the [Enter] key to confirm.



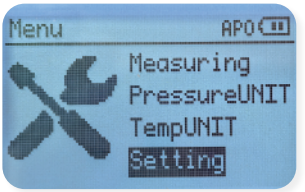
Press the [▲]/[▼] key to select in the temperature unit menu and press the [Enter] key to confirm.



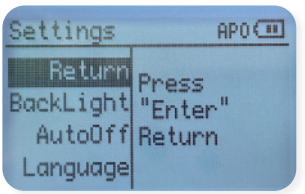
5.2 SYSTEM PARAMETER

Press the [Enter] key to open the menu

Press the [▲]/[▼] key to select Setting press the [Enter] key to confirm.

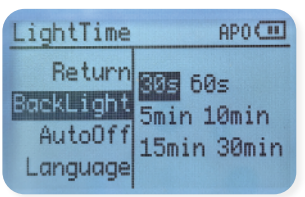


The instrument enters the second page of the Setting menu.
Available settings include:
BackLight Time
AutoOff Time
Language



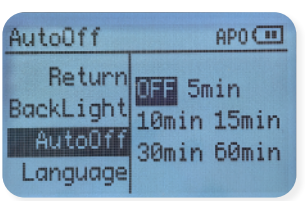
Press the [▲]/[▼] key to select the back-light and press the [Enter] key to activate the setting options.

Press the [▲]/[▼] key to select the setting option and press the [Enter] key to confirm.



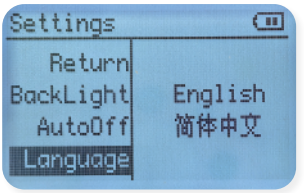
Press the [▲]/[▼] key to select the AutoOff and press the [Enter] key to activate the setting options.

Press the [▲]/[▼] key to select the setting option and press the [Enter] key to confirm.



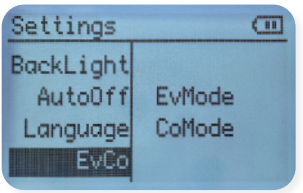
Press the [▲]/[▼] key to select the Language and press the [Enter] key to activate the setting options.

Press the [▲]/[▼] key to select the setting option and press the [Enter] key to confirm.



Press the [▲]/[▼] key to select the EvCo and press the [Enter] key to activate the setting options.

Press the [▲]/[▼] key to select the setting option and press the [Enter] key to confirm.



ⓘ **HIGHLIGHTS OF EVCO SETUP OPTIONS**

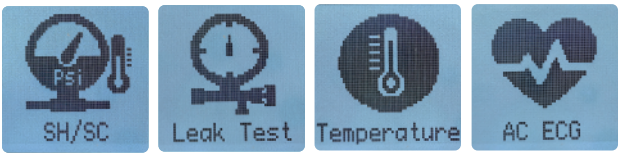
This setting option is the EvMode by default, and the differences between the two setting options are as follows:

EVMODE: The instrument displays the evaporation saturation temperature of the refrigerant and automatically calculates the superheat parameter after connecting the temperature probe.

COMODE: The instrument displays the condensation saturation temperature of the refrigerant and automatically calculates the subcooling parameter after connecting the temperature probe.

6. MEASUREMENT MODE

THE INSTRUMENT HAS 5 MEASUREMENT MODES:



SH/SC Leak Test Temperature AC ECG



SH/SC:

The measures the following values of the system:

- High pressure or Low pressure
- Refrigerant evaporating or condensation temperatures
- Temperature of suction line or Temperature of liquid line
- Superheating or Subcooling

ⓘ An NTC temperature probe can be connected to measure the pipe temperature and automatically calculate the degree of superheat/cooling.
The specific measurement of the evaporation temperature or condensation temperature of the instrument is determined by changing the EvCo in the settings, as detailed in 5.2.
The specific measurement of superheat or subcooling can be determined by changing the EvCo in the settings, as detailed in 5.2.



LEAK TEST:

The measures the following values of the system:

- Initial pressure
- Current pressure
- Test Time
- Differential pressure



TEMPERATURE:

Two-way temperature and temperature difference measurement, the probe temperature can be used as the outdoor temperature instrument, the built-in temperature measurement can be used as the indoor temperature, and the internal and external temperature difference can be calculated according to the two-channel temperature, and the heating/cooling effect of the air conditioner can be quantified.



AC ECG:

The curve generation algorithm is used to visualize the "ripple" of compressor pressure jitter like an "electrocardiogram". And it can adjust the display ratio of different amplitudes to adapt to different working conditions of the air conditioning system.

7.OPERATING INSTRUCTIONS

WARNING
Risk of injury caused by refrigerant that is under high pressure, hot, cold or toxic!

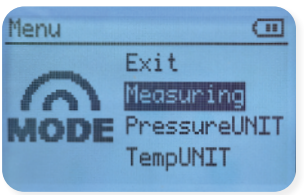
PLEASE TAKE PRECAUTIONS FOR YOUR SAFETY!

- Wear protective goggles and safety gloves.
- Comply with the permissible measuring range (-14.5 to 800 psi).
- Before each measurement, check the refrigerant hoses are intact and connected properly.
- Before applying pressure to the instrument: Be sure to secure the instrument to prevent it from falling.

The above precautions cannot anticipate the complexities of the actual premises and therefore cannot completely prevent accidental injuries from occurring, so please be proactive in identifying potential hazards and comply with local regulations and standards.

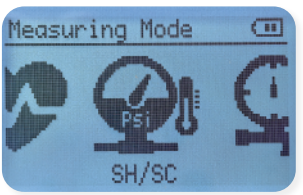
7.1 PRESSURE TEMPERATURE INSPECTION AND REFRIGERANT FILLING

Press the [Enter] key to open the menu.



Press the [▲]/[▼] key to select Measuring press the [Enter] key to confirm.

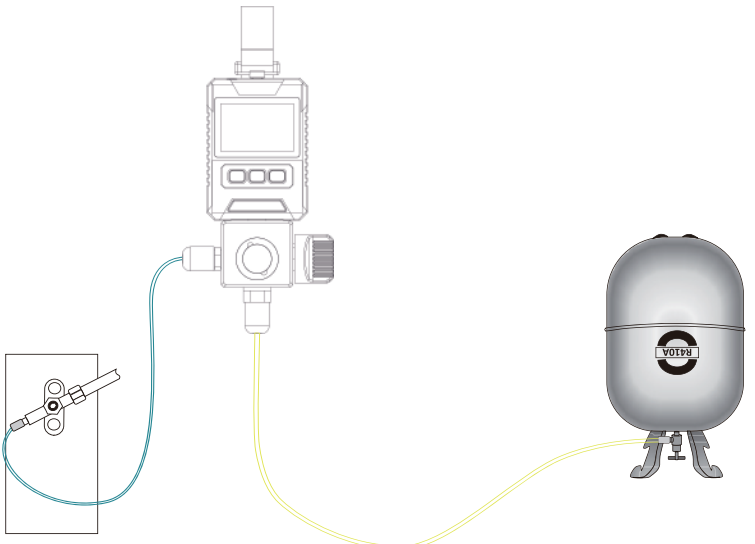
Enter the Measuring menu, press the [▲]/[▼] button to select SH/SC, and press the [Enter] button to confirm.

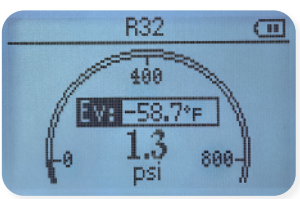


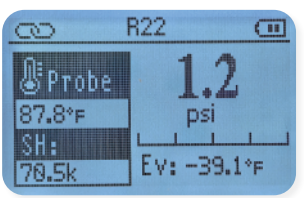
Short press ▲ ▼ to select the correct refrigerant.

Keep the instrument connector connected to the atmosphere, long press ZERO to zero the pressure.

Connect the refrigerant hose to the target system to begin testing or filling.







Without a temperature probe connected, the instrument only displays the measured pressure and saturation temperature parameters.

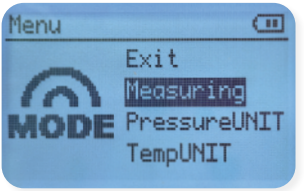
Connecting the temperature probe to display more measurement parameters

- High pressure or Low pressure
- Refrigerant evaporating or condensation temperatures
- Temperature of suction line or Temperature of liquid line
- Superheating or Subcooling

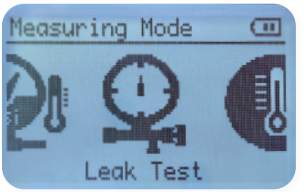
7.2 PRESSURE LEAK TEST

Press the [Enter] key to open the menu

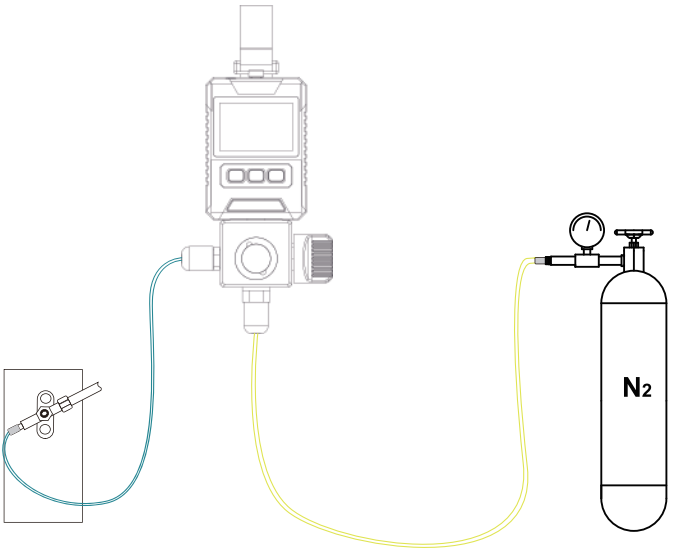
Press the [▲]/[▼] key to select Measuring press the [Enter] key to confirm.



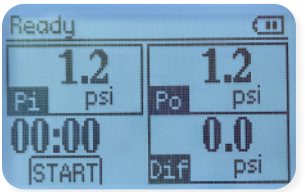
Enter the Measuring menu, press the [▲]/[▼] button to select Leak Test, and press the [Enter] button to confirm



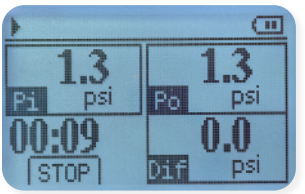
Keep the instrument connector connected to the atmosphere, long press ZERO to zero the pressure.
Connect the refrigerant hose to the target system and the yellow fluoride hose to the N2 source.



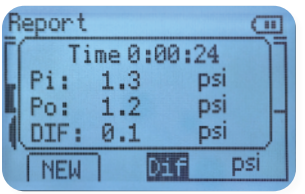
Press ZERO key to start the leak test.



During the test, press ZERO key to stop the leak test.



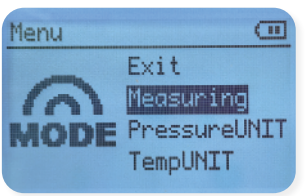
After stopping, the test result is displayed, and press ZERO key to start a new test.



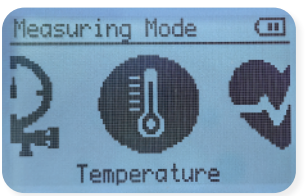
7.3 TEMPERATURE

Press the [Enter] key to open the menu

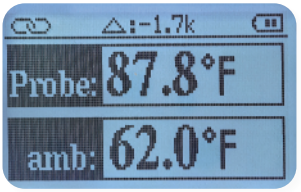
Press the [▲]/[▼] key to select Measuring press the [Enter] key to confirm.



Enter the Measuring menu, press the [▲]/[▼] button to select Temperature, and press the [Enter] button to confirm



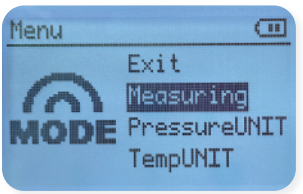
The instrument displays two-way temperature and temperature difference.



7.4 AC ECG

Press the [Enter] key to open the menu

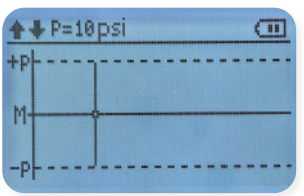
Press the [▲]/[▼] key to select Measuring press the [Enter] key to confirm.



Enter the Measuring menu, press the [▲]/[▼] button to select AC ECG, and press the [Enter] button to confirm



Press the [▲]/[▼] keys to select the appropriate display amplitude to allow the screen to maximize the display of the complete pressure fluctuation curve.



8.MAINTENANCE

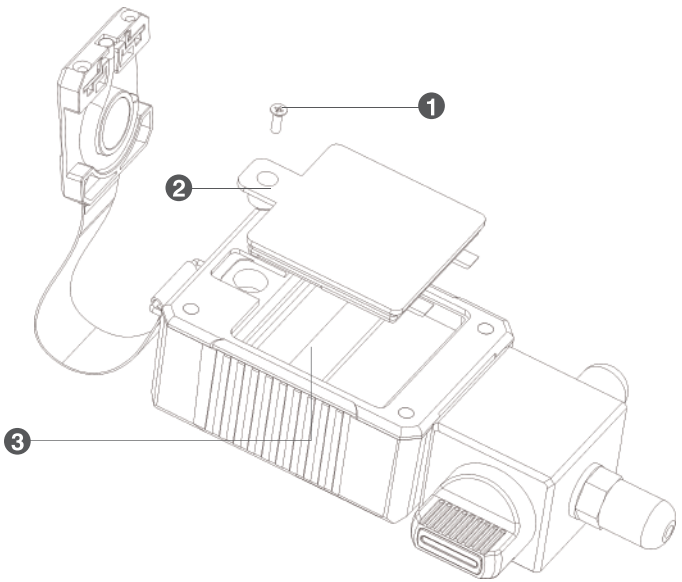
8.1 CLEANING THE INSTRUMENT

Do not use any aggressive cleaning agents or solvents! Mild household cleaning agents and soap suds may be used.
Carefully blow out oil residues in the valve block using compressed air.
Clean interface bolts with a damp cloth as needed.

8.2 KEEPING CONNECTIONS CLEAN

Promptly store the instrument in the carrying case after use. to prevent dust from entering the instrument from the dosing tube.

8.3 CHANGING BATTERIES



1. Loosen the fixing screws of the battery compartment cover.
2. Snap open the battery compartment cover along the groove at the top of the compartment.
3. Remove the spent batteries and insert new ones into the battery compartment. Observe the Polarity.

9.AVAILABLE REFRIGERANTS

US NIST STANDARD DATA FOR 88 REFRIGERANTS

R113	R114	R115	R116	R12	R123	R1233ZD
R1234ZE	R1234YF	R124	R125	R13	R134A	R14
R141b	R143A	R152A	R170	R22	R227EA	R23
R236FA	R245FA	R290	R32	R401A	R401b	R401C
R402A	R402b	R403b	R404A	R406A	R407A	R407b
R407C	R407D	R407F	R408A	R409A	R410A	R410b
R412A	R413A	R414A	R414B	R416A	R417A	R417C
R420A	R421A	R421b	R422A	R422b	R422C	R422d
R424A	R426A	R427A	R428A	R429A	R433B	R434A
R436A	R437A	R438A	R441A	R443A	R448A	R449A
R450A	R452A	R452b	R453A	R454A	R454b	R455A
R458A	R500	R502	R503	R507A	R508A	R508b
R514A	R600	R600A	R601A			

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