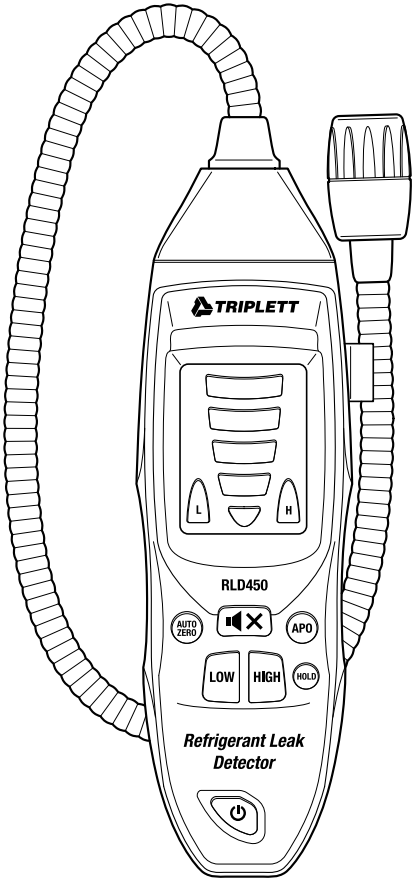
TRIPLETT
Test Equipment & Tools

USER MANUAL

RLD450

Refrigerant Gas Leak Detector



Introduction

Welcome, and congratulations on your purchase of the Triplett RLD450. The Triplett RLD450 Refrigerant Gas Leak Detector is a portable instrument designed for the accurate detection of halogen-based refrigerant leaks in air conditioning and refrigeration systems. It provides reliable performance for identifying leaks in automotive A/C units, commercial refrigeration systems, and other applications using CFC, HFC, and HCFC refrigerants such as R22, R134a, R410A, and R407C. Featuring a fast-response thermistor sensor, adjustable sensitivity levels, and both visual and audible leak indicators, the RLD450 offers technicians a dependable, easy-to-use tool for pinpointing even small leaks quickly and efficiently.

What's in the box:

- RLD450 Refrigerant Gas Leak Detector
- User Manual
- Pouch Case
- AC Charger

Stay updated:

For the most recent version of the user manual, always visit the official Triplett website **www.triplett.com** and search for **RLD450**.

⚠ WARNING

- This Leak Detector is designed only for locating low-level leaks of halogen-based refrigerants.
- Do not enter any enclosed area where a significant refrigerant leak has occurred. High concentrations of refrigerant can displace oxygen and create a risk of suffocation. Always ventilate the area thoroughly before entering.
- Do not operate the instrument in environments with excessive refrigerant concentrations, as halogen refrigerants may become explosive under certain conditions.

- This instrument cannot detect non-halogen refrigerants, such as ammonia (NH_3) or carbon dioxide (CO_2).

⚠ CAUTION

- Always turn off the Leak Detector when not in use to conserve battery life.
- Avoid exposure of the sensor to cleaning solvents, aerosols, or other chemical vapors, as these substances may cause sensor contamination or reduce sensitivity.
- Do not store or operate the instrument in high humidity or corrosive environments.
- Handle the probe carefully. Do not bend or strike it against hard surfaces, as this may damage the internal sensor element.

💡 NOTES

- Allow the Leak Detector to warm up for 2–3 minutes before use to ensure stable and accurate operation.
- For best results, move the probe slowly – about 1 to 2 inches (2.54 to 5.08 cm) per second – along suspected leak areas.
- When finished, replace the protective sensor cap to prevent contamination and extend sensor life.
- Regular calibration and maintenance will ensure consistent performance and detection accuracy.

FEATURES

- Thermistor sensor provides stable and accurate temperature compensation.
- Detects halogen-based refrigerants, including CFCs, HFCs, and HCFCs such as R22, R134a, R410A, R407C, and similar types.
- Audible and visual alarms indicate the presence of refrigerant leaks.
- Low battery indicator alerts when the power level is insufficient.

- Sensor fault alarm notifies the user of a malfunction or sensor issue.
- Flexible gooseneck probe allows easy access to hard-to-reach areas.
- Automatic reset and manual zeroing functions ensure accurate reading.
- Automatic power-off feature conserves battery life.
- Adjustable sensitivity enables detection of both small and large leaks.

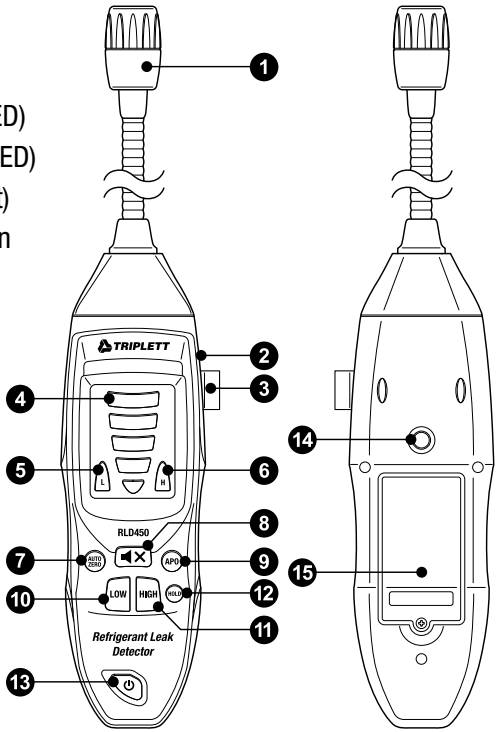
ATTENTION

Using this instrument under the following conditions may lead to inaccurate reading or false alarms:

- Exposure to water immersion or excessive moisture.
- Rapid temperature fluctuations between operating environments.
- Operation in areas with strong air currents or wind.
- Presence of organic solvents, adhesives, cleaning gases, combustible gases, or foaming agents, which may trigger sensor error alarms.
- High concentrations of refrigerant, which can saturate the sensor and cause temporary malfunction.

Product Description

1. Flexible Gooseneck Probe with Sensor Tip (Thermistor)
2. AC Charging Port
3. Probe Clip
4. Blue Concentration Indicator LED
5. Low Sensitivity Indicator (White LED)
6. High Sensitivity Indicator (Yellow LED)
7. Auto Zero Button (Automatic Reset)
8. Audible Alert Enable/Disable Button
9. APO (Automatic Power OFF) Enable/Disable Button
10. Low Sensitivity Button (L)
11. High Sensitivity Button (H)
12. HOLD Button
13. Power Button
14. Tripod Mount
15. Battery Cover



STARTUP

Battery Installation

- When the yellow and white indicator lights are illuminated simultaneously, the battery needs to be replaced.
- Open the battery compartment and install (4) new AAA batteries observing proper polarity.
- Always use fresh, high-quality alkaline batteries for best performance.

Automatic Environment Reset Function

- After the warm-up period, the instrument automatically performs an environmental reset to adjust for ambient air conditions.

- Before use, ensure the detector is placed in clean, refrigerant-free air to allow for proper calibration.

Fault Alarm Function

- If the sensor is disconnected or malfunctioning, the detector will emit a continuous buzzing sound, and the five blue indicator lights will flash.
- When this occurs, stop operation immediately and perform troubleshooting or sensor inspection before further use.

OPERATION

Power Button

- Press and hold the Power button to turn on the instrument. After startup, the LED indicators will flash, and the sensor will begin a 50-second preheat cycle.
- To turn the instrument off, press the Power button briefly.

Automatic Reset and Manual Zeroing

- When the Automatic Reset function is enabled, the Auto Zero button's blue indicator light will illuminate, and the detector will automatically adjust to the surrounding air conditions.
- When the blue light is off, automatic reset is disabled.
- To perform a manual zero, press and hold the Auto Zero button for approximately 2 seconds until a beep is heard, confirming calibration.

Automatic Power-Off (APO) Function

- When the Automatic Power-Off function is active, the blue indicator light below the APO button will illuminate.
- To disable this function, press the APO button briefly. The blue light will turn off, indicating that automatic shutdown is deactivated.

Audio, Sensitivity, and Hold Buttons

- Press the “L” button to activate Low Sensitivity mode. The white indicator light will flash.
- Press the “H” button to activate High Sensitivity mode. The yellow indicator light will flash.
- To control audible indication, press the Sound button to toggle the buzzer on or off.
- Press the Hold button to lock the current LED indication, freezing the display for easier leak pinpointing.

Entering Measurement Mode

- After preheating, position the probe tip as close as possible to the suspected leak area – ideally within 6 mm (¼ inch) of the potential leak source.
- Move the probe slowly around joints, fittings, valves, and any area where refrigerant leakage is likely to occur.
- Avoid rapid probe movement, which may result in inconsistent detection or missed leaks.

Moving the Probe Along Leak Points

- Slowly move the gooseneck probe along all possible leak points.
- When a leak is detected, the buzzer will sound, the indicator lights will increase from low to high, and the beeping frequency will rise as the probe gets closer to the leak source.
- Once the probe is moved away from the leak, the indicators will decrease and the sound will slow down, confirming proper sensor response.

Verification of Detector and Sensor Status

- After sensitivity and functions are set, test the instrument using a known refrigerant leak source or calibration reference.
- The LED indicators should respond by rising in intensity when approaching the leak and decreasing when withdrawn.

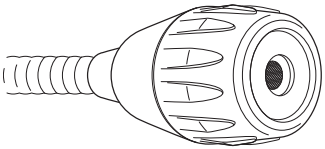
- This confirms the detector and sensor are functioning correctly.
- If no change occurs in the LED indicators or sound, stop using the instrument and contact your authorized Triplett service center for inspection or repair.

REPLACEMENT OF SENSOR PROBE

- The sensor probe has a limited-service life and should be replaced immediately once its performance degrades or the service life has expired.
- **Caution:** The old probe may be hot immediately after use. Allow the instrument to cool down before replacing the probe.

To replace the sensor probe:

1. Remove the protective probe cover.
2. Gently pull out the old thermosensitive diode probe.
3. Insert the new probe in the same direction and position as the original one, ensuring it is securely seated.



Specifications

Feature	Description
Detectable Gases	R134a, R404A, R407C, R410A, R22, R502, R12, and similar halogen-based refrigerants
Sensitivity (R22, R134a)	High: 3 g/a Low: 15 g/a
Sensitivity (R404A, R407C, R410A)	High: 4 g/a Low: 20 g/a
Response Time	< 3 seconds
Recovery Time	< 10 seconds
Alarm Mode	Buzzer and LED light indicators

Power Supply	CR18500-3.7V-5.18Wh-1400mAh Rechargeable Li-Poly
Probe Length	20.1" (51cm)
Automatic Shutdown	After 15 minutes of inactivity
Disable Automatic Shutdown	Press APO button (indicator light turns off)
Disable Environment Reset	Press Auto Zero button (indicator light turns off)
Preheat Time	50 seconds
Operating Temperature	0 to 40 °C (32 to 104 °F), <80 % RH (non-condensing)
Storage Temperature	–10 to 60 °C (14 to 140 °F), <70 % RH
Dimensions	2.70 × 8.07 × 1.77 in (68.5 × 205 × 45 mm).
Weight	19.47 oz (552 g), including the battery.

Warranty Statement

Triplett Test Equipment offers a one-year warranty to the original purchaser of its products. We guarantee that our products will be free from defects in workmanship and materials for one (1) year from the purchase date.

This warranty does not cover:

- Products purchased from unauthorized distributors.
- Items that have been repaired or altered by unauthorized individuals.
- Damage from misuse, abuse, misapplication, negligence, or accidents.
- Products with altered, defaced, or removed serial numbers.
- Accessories, including batteries.