

CLD-100 HALOGEN LEAK DETECTOR Instruction manual



V1.0

General Information **1**

Incorporated with advanced leak detection technology, CLD-100 is an ideal and economic halogen leak detector. Compact in appearance, it is stable and easy to operate.

Detect all kinds of halogen refrigerants

Sensitivity can be adjusted at any time and the detector can be adjusted automatically to the best state of detection. Inner precise IC with ultra-low circuit consumption offers more stable function and lengthens battery life. Two-color visual display of battery voltage. Excellent sensor brings high sensitivity and longer service time.

General Information **2**

Operating temperature: 0°C to 52°C(30°F to 125°F)
 Maximum sensitivity: 6 gr/yr, for all halogenated refrigerants
 Battery life: approximately 20 hours in normal use.
 Response time: instantaneous.
 Work mode: continuous, no limitation.
 Fixed probe length: 20cm.
 Dimensions: 22.9cm x 6.5cm x 6.5cm.
 Warm-up time: approximately 6 seconds.
 Reset time: 2-10 seconds.
 Power supply: 6V DC, four AAA excellent batteries.

Detection Range

The CLD-100 may also be used to detect leaks in other systems and storage/recovery containers. It will respond to all halogenated (including Chlorine and Fluorine) refrigerants. This includes but not limited to:

CFCs e.g. R12, R11, R500, R503 etc.
 HCFCs e.g. R22, R123, R124, R502 etc.
 HFCs e.g. R134a, R404a, R125 etc.
 Blends such as AZ-50, HP62, MP39 etc.

- Detect Ethylene Oxide gas leaks in hospital sterilizing equipment (it will detect the halogenated carrier gas).
- Detect SF-6 in high voltage circuit breakers.
- Detect most gases that contain chlorine, Fluorine and Bromine (halogen gases).
- Detect cleaning agents used in dry cleaning applications such as perchloroethylene.
- Detect halogen gases in fire-extinguishing system.

Battery Indicator

The forepart light of panel indicates the leak and the battery voltage. GREEN Battery voltage is normal, sufficient for proper operation. ORANGE Battery voltage is approaching the lower threshold for operation. Replace them as soon as possible.

Structure **3**



1	Sensing tip
2	Flexible probe
3	Indicator light
4	Buzzer
5	Power on/off and sensitivity adjusting faucet
6	Battery compartment
7	Shell

Detection Method **5**

- The air conditioning or refrigeration system should be charged with sufficient refrigerant to have a standard pressure of 340 Kpa(50 psi) at least when not in operation. Leaks may not be measured at temperature below 15°C(59°F), since this pressure may not be reached.
 - Take care not to contaminate the detector probe tip if the part being tested is contaminated. If the part is very dirty, or condensate (moisture) is present, it should be wiped off with a dry shop towel or blown off with shop air. No cleaners or solvents should be used, since the detector may be sensitive to their ingredients.
 - Visually trace the entire refrigerant system, and look for signs of air conditioning lubricant leakage, damage, and corrosion on all lines, hoses, and components. Each questionable area should be carefully checked with the detector probe, as well as all fittings, hose to line couplings, refrigerant controls, service ports with caps in place, brazed or welded areas, and areas around attachment points and hold-downs on lines and components.
 - Always follow the refrigerant system around in a continuous path so that no areas of potential leaks are missed. If a leak is found, always continue test the remainder of the system
 - At each area checked, the probe should be moved around the location, at a rate no more than 25 to 50mm/second(1-2in/second). And no more than mm(1/4in) from the surface, completely around the position. Slower and closer movement of the probe greatly improves the likelihood of finding a leak.
 - An apparent leak shall be verified at least once as follows:
 - a. Blow shop air into the area of the suspected leak, if necessary, and repeat checking the area. In case of very large leaks, blowing into the area with shop air often helps locate the exact position of the leak.
 - b. First move the probe to fresh air and reset. Then hold the probe tip as close as possible to the indicated leak source and slowly move around it until the leak is confirmed.
 - Automotive A/C systems only
 Leak testing of the evaporator core while in the air conditioning module shall be accomplished by tuning the air conditioning fan on high level for a period of 15 seconds in minimum, shutting it off, then waiting for the refrigerant to accumulate for 10 minutes. After such time, insert the probe into the fan resistor block or condensate drain hole, if no water is present, or into the closest opening in the heating/ventilation/air conditioning case to the evaporator, such as the heater duct or vent duct. If the detector alarms, a leak apparently has been found.
- Notes:**
- Shut down the engine during detecting automotive A/C systems leak.
 - Following any service to the refrigerant systems and any other service which disturbs the refrigerant system, a leak test of the repair and of the service ports of the refrigerant system should be done.

Operating Instructions **4**

- Switch the detector on and buzzer will beep discontinuously.
- Verify the battery voltage level by observing the power indicator.
- Adjust appropriate sensitivity, or adjust the sensitivity at any time during operation. This adjustment will not interrupt detection.
- To detect leak when the detector is switched on for 6s.
- When refrigerant leak is detected, the buzzer will change to a "siren" type sound.
- Verify the place where siren sounds and detect continuously until the leak is located.

Notes:

CLD-100 features on automatic circuit and a reset function that enables it to ignore ambient concentrations of Halogen. Upon initial power on, the detector automatically sets itself to ignore the level of refrigerant present at the tip in 6s and enter into the best state of detection. If place the sensing tip near a known leak source and switch the detector on it is convenient to find higher concentration leak. Or move the detector to fresh air and switch it on, adjust it to maximum sensitivity, any concentration above zero will be detected. In measuring state, automatic circuit will follow the change of halogen gas concentration in environment to avoid false alarm. The detector features vari-speed sensitivity adjustment and can be adjusted in the course of detection. Adjust the faucet clockwise/counterclockwise for high/low sensitivity. It does not mean the higher sensitivity is adjusted, the better the detector will work, because if the air is not fresh, selecting higher sensitivity will cause an improper alarm. When the leaked gas is detected, the audible tone will change to a "siren" type sound. More refrigerant, more siren. At the same time, indicator light is flashing quickly.

Operating Tips

- Adjust to higher sensitivity when a leak can't be found. Adjust to lower sensitivity when the detector runs unstably.
- When the buzzer alarms for leak, if the sensing tip remained at the part being detected long enough, the circuit will equalize it.
- In windy areas, even a large leak is difficult to be found. Under this condition it is better to shield the potential leak area.
- Be aware that the detector may alarm if the sensing tip contacts with moisture and/or solvents. Therefore, avoid contact with these during leak checking.

Maintenance **6**

Appropriate maintenance of your leak detector is very important. Carefully following the instructions to reduce the mal-operation and prolong the life expectancy of the detector.

- Keep the sensing tip clean from the dust, moisture and grease. If the tip itself is dirty it can be cleaned by immersing in a mild solvent, such as alcohol, for several seconds, and then using compressed air and/or a towel to clean.
- Never use solvents such as gasoline, turpentine, minerals etc. They will leave detectable residue and desensitize your detector.

Warning

Turn the detector off before replacing the sensing tip. Failure to do so may result in a mild electric shock!

Sensing tip replacement

- The tip will eventually wear out and require replacement. It is difficult to predict exactly when this will occur since tip longevity is directly related to the conditions and frequency of use. The tip should be replaced whenever the alarm sounds or becomes erratic in a clean and pure environment.
- Take out the batteries in case the detector is left unused in long term. If the detector does not work, please check whether the batteries are in a stable connection or the voltage is below acceptable operating level. If not, please inspect whether the tip is dirty or in a stable connection with the probe.
- Your part of opening the detector is beyond the warranty service.