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ILD-100H Heated Diode Refrigerant Leak Detector User Manual

Overview

ILD-100H hand-held refrigerant leak detector has a heated diode gas sensor and precise control circuits, which enable it to detect all halogen refrigerants; it has high sensitivity, fast response speed, stable performance and multiple functions; its ergonomic design makes the operation easier and more comfortable.

Product Structure and Components

1. Flexible Probe	7. Display Screen
2. UV Light	8. Peak Button
3. Mode Button	9. On/Off Button
4. Sensitivity Button	10. Mute Button
5. Probe cap	
6. Protective sheat	

Parameters

Sensor type	Heated diode gas sensor	**Applicable refrigerant**	CFCs, HCFCs, HFCs, HCs and HFOs
Minimum detectable leakage	≤ 3g/year	**Sensor lifetime**	≥1 year
Reaction time	≤3 seconds	**Reset**	Automatic/manual
Warm-up time	30 seconds	**Probe length**	350mm
Reset time	≤10 seconds	**Package size**	320mm*260mm*60mm
Working temperature range	-10-50°C	**Battery life**	10hours
Working humidity range	<80%RH (non-condensing)	**Weight**	305g

Note: Applicable to all halogen refrigerants, including but not limited to:

CFCs: Such as R12, R11, R500, R503

HCFCs: Such as R22, R123, R124, R502

HFCs: Such as R134a, R404a, R410a, R407C, R32

HCs: Such as R600a, R290

HFOs: Such as R1234YF

Function Introduction

4.1 Battery Level Indication

Battery level icon	Battery level
	Full
	High
	Medium
	Low

Note: 1) When the battery power is insufficient, the test result may be inaccurate.

2) When the battery power is "low", the leak detector will automatically shut down,

4.2 Sensitivity Indication

Sensitivity icon	Sensitivity grade
H	High
M	Medium
L	Low

Note: After warming up the leak detector, press the sensitivity button to adjust the sensitivity.

4.3 Leak Alarm/Mute Function

The detector has two leak alarm prompts, sound and light. When a leak is detected, the LCD screen will display the leak level (1-8). The higher the leak concentration , the greater the number of histograms, and the higher the frequency of the alarm sound. You can choose to turn on the sound and light alarm at the same time or only choose the visual alarm. After the equipment is warmed up and enters the working state, it will automatically turn on the sound alarm function. Press the mute button to cycle off/ on the sound alarm.

4.4 Automatic/Manual Reset

function To prevent false alarms caused by refrigerant mixed in the air, the leak detector has function of ignoring the surrounding refrigerant concentration. Automatic environment zero setting function: The automatic environment zero setting function (AUTO) is the default when starting up. The leak detector will automatically ignore the Refrigerant concentration, an alarm will only occur when a high refrigerant concentration level is detected around the probe. Short press the SENS button to adjust the sensitivity. At this time, long press the MUTE button to switch to manual calibration mode. "RESET" will flash in the lower right corner of the screen 3 seconds and then MANUAL will be displayed, indicating that the manual environment zero setting is completed and the manual environment zero setting mode is entered. Manual environment zero setting function: The user needs to press and hold the SENS button to set the environment to zero. The lower right corner of the screen flashes "RESET" for 3 seconds and then displays MANUAL, indicating that the manual environment zero setting is completed and the user can continue to search for a higher refrigerant concentration point.

Note: Setting the leak detector to zero in air with a low ambient refrigerant concentration will increase the sensitivity of the product. Setting zero in the air with a high refrigerant concentration will reduce the sensitivity of the product.

4.5 Automatic Shutdown Function

The leak detector will automatically power off if there is no button operation for 30 minutes. When there is any effective button operation, the system will reset the 30-minute countdown.

4.6 Fault Alarm Function

Alarm code	Alarm reason
E1	Probe power failure
E2	Probe missing or faulty

Note: 1) The warm-up failure of the probe is detected, and it needs professional technicians to repair it.

2) After the problem of the probe missing or failure is solved, the detector needs to be re-warmed up.

3) When there are more than one faults simultaneously, the fault priority is E1>E2.

Operation Instructions

5.1 Operation

① Long-pressing the "on/off" button, the leak detector will turn on and starts to warm-up;

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Operation Instructions

Operation

① Long-pressing the "on/off" button, the leak detector will turn on and starts to warm-up;

②After the warm-up is completed, the histogram display interface will be entered by default, with high sensitivity (SENS:H), peak recording function on (PEAK), automatic calibration mode (AUTO), automatic shutdown time of 10 minutes (10min), and buzzer in standby mode. The buzzer sounds for about 1 second once.

③Move the probe to detect possible leaks. The flexible probe can be bent into the required shape to reach the area that needs to be detected.
④If a leak is detected, the device will issue an audible and visual alarm. The higher the leakage concentration, the greater the number of histograms on the screen, and the higher the frequency of the alarm sound.

⑤After multiple continuous measurements and leakage alarms, it is recommended to move out of the detection area for 10 seconds before detecting the leakage source.
⑥Short press the SESN button to adjust the sensitivity to high sensitivity (H), medium sensitivity (M), and low sensitivity (L) in sequence;
⑦Long press the MUTE button to switch to manual calibration mode (MANUAL), which requires the user to long press the SENS button . Carry out manual calibration, and the calibration will be completed after flashing "RESET" for 3 seconds; note that in manual calibration mode, the sensitivity cannot be adjusted; long press the MUTE button to return to the automatic calibration mode;
⑧Short press the PEAK button to turn off the peak recording function (PEAK is not displayed at the bottom of the screen). Press and hold the PEAK button to adjust the automatic shutdown time to 10 minutes (10min), 30 minutes (30min), 60 minutes (60min) and turn off the automatic shutdown function (OFF);
⑨Short press the MODE button , switch to the curve display interface, the curve rises when it is close to the leakage source, and drops when it is far away from the leakage source. Press and hold the SESN button to manually reset.

⑩Press the “ON/OFF” button for 3 seconds to turn off it

Maintenance

Proper maintenance of the leak detector can prolong the service life of the sensor and improve its performance.

① Sensor service life: it can be used normally for ≥1 year. If the sensor frequently works in an environment with high-concentration refrigerant, the service life will be reduced quickly. When the service life is over, the sensor needs to be replaced.

② Replacing the sensor: As shown in the figure below, unscrew the probe shell and then replace the sensor. Attention: the sensor and the socket shall be in a good contact.

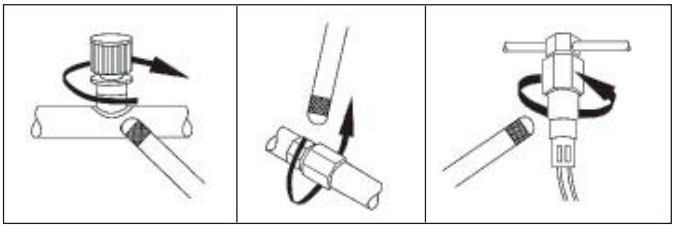
Note:

1. *Please turn off the detector before cleaning the probe shell.*
2. *Clean the sensor with a cotton cloth or dry gas to ensure that there are no water drops, oil, grease, dust or other pollutants on the sensor surface.*
3. *Put the leak detector and sensor in a dry and clean place. If it will not be used for a long time, please remove the battery.*

Safety and Detection

7.1 Detection Method

The method to use the device to detect is shown in the following figure:



1. Bend the flexible probe into the required shape and put the probe slowly in the area where leakage may occur.
2. When a leak is detected, the leak detector will give an audible and visual alarm. With the increase of refrigerant concentration, the alarm frequency will become higher, and the alarm value on the screen is larger. When the leak detector gives an alarm, it means that you are close to the leak source. Re-check the nearby area to confirm whether the alarm is repeated.
3. If you close to the leakage point, you can slowly move the detector to the suspected leakage source from the areas where the detector does not give alarms to find out the accurate location of the leakage source. In addition, properly using the "zeroing" function and adjusting the sensitivity can help find out the leakage point location (at first, you should use high sensitivity to roughly find the leakage area, then select a lower sensitivity and repeat the above steps to find out the leakage source point).
4. Once the leakage source location is determined, you can mark it, and then detect other places of the refrigeration system until all leakage points are found.

7.2 Precautions

1. During detecting, the refrigeration system pressure shall be ≥50psi, and the detected area should be nearly air-static. If there is a wind, the leaked refrigerant gas will be quickly diluted or blown away from the leakage source point, thus affecting the detection accuracy. In addition, before detecting, please use a fan to blow off the refrigerant gas emitted by a known source in the refrigeration system to avoid its influence on accuracy.

2. The "Automatic Reset" function is a default option, so when the detector is started and detects some refrigerant, it will automatically zero the value of the current ambient refrigerant concentration. If the "Automatic Zeroing" function is turned off, you have to short-press the "Reset" button to zero the value of current ambient refrigerant concentration.
3. Leakage sources usually occur in oil-polluted or dusty places, joint valve or pipeline connection. These places shall be detected with priority.
4. The probe of the leak detector should be 3 mm-5 mm (1/8 in-1/4 in) away from the suspected leak point during detection, so as to prevent it from being polluted by oil and other pollution and affecting the detection accuracy. The probe should move at a speed of about 25-50mm/s(1-2in/second) when detecting.
5. It is strictly forbidden to place the sensor directly in the refrigerant environment with a concentration exceeding 30000ppm, which may cause permanent damage to the sensor.

List

Leak detector	*1	User manual	*1	USB cable	*1	Certificate	*1
Blow box	*1						