ULTRASONIC LEAKAGE DETECTOR

ULD-586

This Ultrasonic Leakage Detector is small in size, light in weight, easy to carry. Although complex and advanced, it is convenient to use and operate. Its ruggedness will allow many years of use if proper operating techniques are followed. Please read the following instructions carefully and always keep this manual within easy reach.

1. THEORY OF ULTRASONIC GAS LEAKAGE DETECTION

Human ear can hear sound frequency up to 18 KHz. The sound frequency above 20 KHz is categorized as ultrasonic sound which is not audible.

Ultrasonic sound is very directional in nature. We can utilize this nature to pinpoint the exact origin of the sound source where the leak is located.

Physics tells us that the gas always flows from the higher pressure region to the lower one. When the pressure difference is only a small opening, the turbulence created by the gas through the small hole then generates ultrasonic sound.

In the non pressurized state, the ultrasonic transmitter is applicable, ultrasonic wave can leak from the small hole. Ultrasonic gas leakage detector is designed based on the above simple physics.

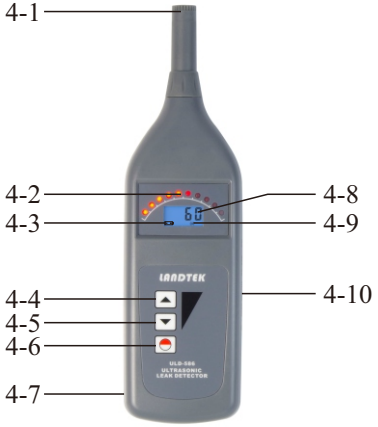
2. FEATURES

This ULTRASONIC GAS LEAKAGE DETECTOR is designed to locate the source of the ultrasonic emissions generated by gas or air leaks. The leakage level is displayed by "LED Display Panel", and is covered to audible sound by either internal buzzer or to external optional earphone.

3. SPECIFICATIONS

Leakage Sensitivity Indicator	LED display panel & audible tone. (LED display is a relative measurement only. Audible tone is the frequency of the received ultrasonic sound divided by 32.)
Frequency Response	20 KHz t0 100 Khz.
Power Supply	4x1.5 AAA(UM-4) battery
Power Consumption	Approx. DC 25 mA.
Operating Temperature	0 to 50 °C (32 to 122 °F).
Operating Humidity	Max. 80% RH.
Weight	Approx. 140 g/0.31 lb (including battery).
Size	HWD 236 x 63 x 26 mm 9.3 x 2.5 x 1.0 inch

4. PANEL DESCRIPTION



4-1 Sensor Microphone
4-2 LED Display Panel
4-3 Low Battery Indicator
4-4 Plus Key
4-5 Minus Key

4-6 Power Key
4-7 Battery Cover/Compartment On The Back
4-8 Sensitivity Indication
4-9 Signal Indicator
4-10 Earphone Jack

5. OPTIONAL PVC PIPE

This accessory can be used to extend the sensor, carrying the sound from places too tight, too dangerous for human contact, to eliminate the background noise.

When using, just sleeve the PVC pipe on the sensor.

6. MEASURING PROCEDURE

6-1 Plug in the optional earphone into the Earphone Jack (4-10) if so desired.

6-2 Press the Power Key (4-6) to turn on the detector, the default sensitivity is 0.

6-3 Press the Plus Key (4-4) to set the sensitivity to 100.

6-4 Approach the object under test from different angles and to different positions. The level of the audible tone, the level of the LED display panel and the Signal Indicator will change in this process.

6-5 Try to locate a point or an area where the audible tone is louder and the level of the LED display panel shows the maximum.
(Note : When the LED at the right-hand side of the display panel is lit, it indicates the maximal reading of detector to that specific sensitivity range setting.)

6-6 Press the Minus Key (4-5) to set the sensitivity to a lower setting Repeat step 6-5.

6-7 Repeat steps 6-5 and 6-6 until the leaking source is located.

7. IMPORTANCE of THE MEASURING

WARNING

7-1 If there is quite a bit of background noise, you may muffle the leak detector to hear the actual leaks. This can be accomplished with the PVC PIPE.

7-2 For very noisy environments, the optional earphone are suggested to allow the operator to hear the converted ultrasonic sound.

7-3 This detector is not intend designed to measure the flammable gas leakage. For safety consideration, please should not take the detector to near the flammable gas environment.

7-4 When checking the ultrasonic signal in the electrical system, ensure that you are at a safe distance from the electric shock.

8. APPLICATIONS

8-1 Ultrasonic Leakage Detector only
(1) Leaks in refrigeration and air condition systems.

The leakage detector be used to detect vacuum leaks or pressure leaks in refrigeration and air conditioning installation. A leak will emit an ultrasonic sound as the refrigerant escapes the unit. The detector can be used to pinpoint the exact location of the leak by "homing" in on this sound.

(2) Leaks in heating system.
(3) Internal leaks in steam transfers.
(4) Compressed air leaks.
(5) Tire & tube leaks.
(6) Engine seals.
(7) Electrical arcing.
Electrical arcing can be detected with the ultrasonic leakage detector. Arcing produces a rich ultrasonic spectrum that is quite noisy. Used the PVC pipe accessory to extend the

sensor of the detector for safety purpose.
(8) To check the bearing problems.
(9) Bake system.

8-2 Ultrasonic Leakage Detector + Ultrasonic transmitter(UT-40, optional)
(1) Air leaks around door & window gaskets & seals.
(2) Water leaks in roofs.
(3) Conduit & pipe identification.
(4) Door & trunk seals.
(5) Windshield leaks.

9. BATTERY REPLACEMENT

9-1 When it is necessary to replace the battery, i.e. battery voltage less than approx. 4.5v , the Low Battery Indicator (4-3) will appear on the Display.

9-2 Slide the Battery Cover (4-7) away from the instrument and remove the batteries.

9-3 Install the batteries (4x1.5v AAA / UM-4) Correctly into the case.

9-4 If the instrument is not to be used for any extended period, remove batteries.