

O P E R A T I N G M A N U A L



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**Whisper<sup>®</sup>**  
Ultrasonic Leak Detector

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## Declaration Of Conformity

This is to certify that this equipment, designed and manufactured by INFICON® Inc., Two Technology Place, East Syracuse, NY 13057 USA, meets the essential safety requirements of the European Union and is placed on the market accordingly. It has been constructed in accordance with good engineering practice in safety matters in force in the Community and does not endanger the safety of persons, domestic animals or property when properly installed and maintained and used in applications for which it was made.

Equipment Description . . . . . Whisper® Ultrasonic Leak Detector  
Applicable Directives . . . . . 73/23/EEC as amended by 93/68/EEC  
2004/108/EC  
2002/95/EC (RoHS)  
Applicable Standards . . . . . EN61010-1: 2001  
EN61326-2-2:2006  
EMC CI A, Immunity Criteria B  
CE Implementation Date . . . . . January 15, 2001  
Authorized Representative . . . . . Brian King  
Business Unit Manager, Service Tools  
INFICON, Inc.

Any questions relative to this declaration or to the safety of INFICON's products should be directed, in writing, to the quality assurance department at the above address.



### **WARNING**

**This symbol is used to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this instrument.**

INFICON® and Whisper® are trademarks of INFICON.

## Applications

- ♦ A/C Refrigerant Leaks (Any and all types of refrigerant)
- ♦ Locating Worn Bearings
- ♦ Leaks in Pneumatic Control Systems
- ♦ Leaks in Natural Gas, LPG Leaks
- ♦ Leaks in Compressed Air Systems
- ♦ Leaks in Vacuum Systems
- ♦ Diagnosing Solenoid Operations
- ♦ Steam Traps
- ♦ Electrical Arcing

## Specifications

Sensitivity . . . . .	Detects a leak through a 0.004" diameter orifice at 5.0 psig from a 12" distance.
Usage . . . . .	Indoor or Outdoor
Operating temperature range. . . . .	+32 °F to +122 °F (0 °C to +50 °C) (may be operated for a limited time in lower temperature environments)
Storage temperature range . . . . .	+14 °F to +140 °F (-10 °C to +60 °C)
Humidity . . . . .	85% RH NC Max.
Altitude . . . . .	6500' (2000 m)
Power Supply . . . . .	2 "D" cell alkaline batteries
Battery Life . . . . .	Approximately 165 hours
Pollution Degree . . . . .	2
Overvoltage category. . . . .	2
Weight (with battery) . . . . .	1.5 lb (680 kg)

## Introduction

The Whisper® will detect and locate sources of ultrasonic disturbance through the use of sophisticated circuitry.

An ultrasonic disturbance is created when objects collide. Vacuum leaks create collisions between molecules flowing through an orifice. Pressure leaks create collisions between molecules exiting an orifice. All gases and liquids create disturbances if forced into, or out of, an orifice. All solid materials create disturbances when any friction exists.

The Whisper is therefore capable of detecting and locating sources of ultrasonic disturbances created by gases, liquids or solids.

## General Information

The Whisper is sensitive only to ultrasound (40.5 kHz) and is unaffected by audible noise.

INTERNAL NOISE CONTROL (I.N.C.) allows the use of this instrument in extremely noisy environments such as mechanical rooms, around operational chillers, etc. Drag your finger upwards on the sensitivity touch pad to increase sensitivity when experiencing little or no environmental noise. Drag your finger downwards on the sensitivity touch pad to reduce sensitivity in response to an increase in environmental noise. The I.N.C. works much like a two way radio squelch allowing only the strongest and closest signals to penetrate the electronic wall built by the I.N.C. circuitry.

Many variables can affect the amount of ultrasound generated by the leakage of gas through an orifice. Such factors include the pressure/vacuum versus the surrounding environment, how smooth the edges of the orifice are, the diameter of the orifice, the leak detector's distance from the orifice and the presence of airflow, which may dissipate the ultrasound.

As you use the Whisper, keep in mind that these factors may affect your ability to detect ultrasonic leaks.

## Locating Leaks

**NOTE:** Bumping the probe into objects while seeking leaks will cause false alarms. Leaks will be indicated by an a beeping audio alarm and flashing LEDs. Disregard occasional short alarms.



### **WARNING**

**Always keep clear of hot and/or moving engine and machinery parts. Damage or injury could result.**

1. Press Power button to turn unit on. Whisper will turn on in maximum sensitivity. The instrument will not beep or tick in an idle state but the "Battery" LED will illuminate to indicate the detector has adequate power. When the "Battery" LED flashes, the batteries are nearing the end of their useful life and will soon need to be replaced.
2. Point the Whisper in the direction of the suspected leak and scan the area by making a slow "X" (a vertical and horizontal type sweeping motion) while keeping the probe pointed in the general direction of the suspected leak.
3. Whisper will beep when it detects an ultrasonic disturbance. To isolate the ultrasonic disturbance, gradually decrease sensitivity by slowly dragging your finger down the touch pad until the beeping stops. The sensitivity level will be indicated briefly by the number of illuminated LEDs next to the touch pad.
4. Move closer to the suspected leak, continuing the sweeping pattern and narrowing the range of the sweep by making smaller patterns until the ticking once again increases. This will lead to the location of the disturbance. If an exact location is desired, attach the flexible rubber extension to the probe and repeat step 3.
5. Repair all leaks as located and repeat scan.

## High Noise Environments

In noisy environments, it may be necessary to "tune out" unwanted signals from other areas in close proximity to where you are scanning for leaks. Begin by attaching the rubber extension over the probe. When the extension is attached, the sensing angle of the system is reduced, increasing the directional capability and reducing the effects of the adjacent noise sources. This allows the probe to become more directional. If you suspect your reading to originate from a source other than what you are scanning, point probe toward suspected other source (may be a compressor, v belt, discharging steam line, etc.) and slowly decrease sensitivity until the alarm stops. Turn probe back toward direction of suspected leak and continue to scan. This step may have to be repeated as you move

around to other locations in search of leaks. If probe is close to internal moving parts of equipment, and the alarm sounds, push rubber probe against housing of equipment. If the alarm still sounds, internal friction of moving parts and not a leak source, may be causing the alarm.

## Heterodyne Feature

Whisper features heterodyne capability, which converts the ultrasonic frequencies detected by the instrument to sounds that can be heard by the human ear. This allows you to more easily isolate the ultrasonic source.

Simply plug the included headphones into the jack on the right side of the Whisper to enable heterodyne capability. Dragging your finger upwards/downwards on the sensitivity touch pad will increase/decrease the volume of the headphones.

## Transmitter Accessory

The Whisper Transmitter is an optional accessory which can be used with the Whisper Ultrasonic Leak Detector to locate leaks in walk-in coolers/freezers, wall and ceiling joints, around doors, windows, body seals, rubber moldings, ducts, etc. The Transmitter produces the frequency detected by the Whisper. By placing the Transmitter in a sealed area and scanning the exterior of this area, any signal escaping from the sealed area will be indicated by the Whisper. A flaw in the seal can quickly and accurately be pinpointed.

1. Turn the transmitter power switch on. The LED will illuminate to indicate it is operating.
2. Place the Transmitter into the area to be tested. Seal area to be tested completely.
3. Set the "Sensitivity" control of the Whisper to maximum.
4. Scan the exterior area for the suspect leaks.
5. To pinpoint leaks, see [Locating Leaks, on page 5](#).
6. When using the transmitter with headphones plugged into the Whisper, the instrument will indicate ultrasonic disturbances through a variable-pitch tone.

## Care and Maintenance

To clean exterior surfaces, wipe with a soft damp cloth.

When the batteries near the end of their useful life, the "Battery" LED will flash. To change the batteries, depress the release tab using a coin or a screwdriver and slide the cover back. Replace the batteries with two new "D" cell alkaline batteries. Replace the cover by holding it in place along the side rails while sliding it forward to engage both the rear hooks and the front release tab.

## Warranty

INFICON warrants your Whisper Ultrasonic Leak Detector to be free from defects of materials or workmanship for two years from the date of purchase. INFICON does not warrant items that deteriorate under normal use, such as power cells. In addition, INFICON does not warrant any instrument that has been subjected to misuse, negligence, or accident, or has been repaired or altered by anyone other than INFICON.

INFICON's liability is limited to instruments returned to INFICON, transportation prepaid, not later than thirty (30) days after the warranty period expires, and which INFICON judges to have malfunctioned because of defective materials or workmanship. INFICON's liability is limited to, at its option, repairing or replacing the defective instrument or part.

This warranty is in lieu of all other warranties, express or implied, whether of merchantability or of fitness for a particular purpose or otherwise. All such other warranties are expressly disclaimed. INFICON shall have no liability in excess of the price paid to INFICON for the instrument plus return transportation charges prepaid. INFICON shall have no liability for any incidental or consequential damages. All such liabilities are excluded.



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