

# Digital Sound Level Meter™

## Prevent worker-related hearing loss!

### What Is The Digital Sound Level Meter?

EXAIR's Model 9104 Digital Sound Level Meter is an easy to use instrument that can measure and monitor the sound level pressure in a wide variety of industrial environments. The source of loud noises can be quickly identified and isolated so corrective measures can be taken to reduce or eliminate the problem. For compressed air noise, it is often as simple as replacing the existing inefficient blowoffs with EXAIR's engineered compressed air products such as the Super Air Knife, Super Air Amplifier or Super Air Nozzles. In many cases, the EXAIR products can reduce noise levels by 10 dBA which is perceived as cutting the sound volume in half.

### Why The Digital Sound Level Meter?

Hearing loss induced by high noise in the workplace is a common problem. Exposure to high noise levels for an extended period of time can lead to permanent hearing loss for workers not wearing proper hearing protection. The Digital Sound Level Meter can help employers protect workers by monitoring noise levels so they don't exceed the limits shown in OSHA Standard 29 CFR – 1910.95(a). Failure to comply can result in hefty fines.

#### OSHA Maximum Allowable Noise Exposure

Hours per day (constant noise)	8	7	4	3	2	1	0.5
Sound level dBA	90	91	95	97	100	105	110

OSHA Standard 29 CFR - 1910.95 (a)

Accurate and responsive, the Digital Sound Level Meter measures the decibels of the sound and displays the reading on the large LCD display that has a backlight button for easier viewing. An "F/S" response time button provides a choice of slow response measurements for comparatively stable noise measurement or fast for varying noise. The "Max Hold" setting will measure the maximum noise level of sounds and updates continuously if a louder sound is detected. Certification of accuracy and calibration traceable to NIST (National Institute of Standards and Technology) is included.

### Advantages

- Measures sound level range from 35 dB - 130 dB (Low: 35 to 100; High: 65 to 130 dB)
- Frequency range 31.5Hz - 8kHz
- A and C weightings (check compliance with safety regulations and acoustic analysis)
- Slow (1 sec) and fast (125ms) response settings to check peak and average noise levels
- Maximum hold feature to measure peak sound levels
- Accuracy is  $\pm 1.5$  dB
- NIST Certification included
- Four digit LCD display in 0.1 dB steps with backlight
- Battery life is 50 hours (typical) with low battery alert
- Automatic power off after 15 minutes of non-use
- Meets CE, ANSI and IEC Type 2 SLM standards
- Tripod mounting ideal for taking long term measurements (tripod not included)
- Removable windscreen for use in windy conditions to reduce misreads
- Includes protective carrying case, 9V battery, instruction manual and removable windscreen



The Sound Level Meter identifies a potential source of hearing loss.



Model 9104 Digital Sound Level Meter comes complete with removable wind screen, battery and a protective case.



## Ultrasonic Leak Detector



# Ultrasonic Leak Detector

## Locate costly leaks in your compressed air system!

### What Is The Ultrasonic Leak Detector?

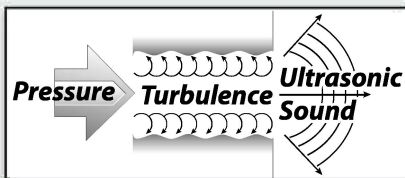
The Ultrasonic Leak Detector (ULD) is a hand-held, high quality instrument that can locate costly leaks in a compressed air system. A person using the ULD need only aim it in the direction of a suspected leak. When a leak is present, an audible tone can be heard with the use of the headphones, and the LED display will light. Testing the various unions, pipes, valves and fittings of a complete installation can be done quickly and effectively at distances up to 20' (6.1m) away!



### Why The Ultrasonic Leak Detector?

Plants that aren't maintained can easily waste **up to 30%** of the compressor output through leaks that go undetected. Compressing air is an expensive operation. Saving the wasted compressed air reduces overall operating costs. In large plants, the cost of a small air leak may be insignificant, but many small leaks when located and repaired can amount to huge energy savings.

### What is Ultrasound?



Ultrasonic sound is a range of sound that is above human hearing capacity. Most people can hear frequencies from 20 Hz to 20 kHz. Sound from 20 kHz to 100 kHz can not be heard and is called "ultrasonic". The Model 9061 Ultrasonic Leak Detector converts ultrasonic sound emissions to a range that is audible to people. (The sound generated by the ULD is 32 times lower in frequency than the sound that is received.)

### Advantages

- Detects any pressurized air leak up to 20 feet (6.1m) away
- Converts ultrasound to an audible frequency
- LED display confirms the leak location
- Detects leaks in noisy industrial environments
- Sensitivity controls provide accurate detection
- Not affected by contaminants or windy conditions
- Includes accessories to detect leaks in hard to reach areas
- Rugged carrying case
- Meets ASTM standards

### Applications

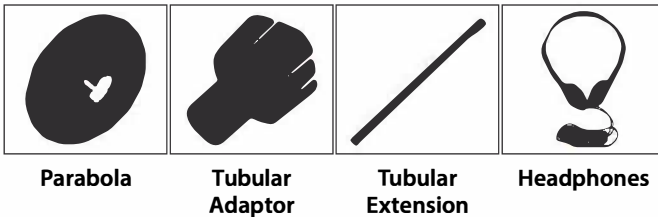
- Locates leaks in air, steam and non-flammable gas systems including pipes, fittings, valves, cylinders and pressure vessels
- Finds the source of bearing and gear wear
- Locates arcing in an electrical system
- Detects refrigeration and air conditioning system leaks
- Locates leaks in brake systems, tubes, tires and radiators
- Senses cracks in moving rubber v-belts
- Detects leaks in vacuum systems
- Checks condition of engine seals



LED indicators on the Ultrasonic Leak Detector show the exact source of the leak or problem.

# Ultrasonic Leak Detector

In a plant where loud noise levels exist, it is very difficult to locate leaks by merely listening for them. Most plant noises are in the normal audible range of human hearing, while air escaping from a small orifice is ultrasonic. The ULD can be adjusted to filter out background noise using the three sensitivity settings of X1, X10 and X100 along with an “on/off” thumb wheel for fine sensitivity adjustment. The parabola or tubular extension (*shown below*) can also be attached to the ULD to mask out intense background noise. The ULD detects only the ultrasonic sounds that are generated.



Ultrasound is directional in transmission and is loudest at the source. Turbulence created by the air forced through a small orifice generates ultrasonic sound. This emitted sound is called “white noise” and occurs when the air moves from a high pressure area such as a pipe or vessel and escapes to a low pressure area such as the room. The Ultrasonic Leak Detector converts the turbulent flow to a frequency that can be heard using the headphones. As the ULD moves closer to the leak, more LEDs on the display light to confirm the source of the leak.



The Model 9061 Ultrasonic Leak Detector quickly pinpoints a costly leak in a noisy industrial environment.

In some cases, the suspected leak is in a hot area and/or close to moving parts. The tubular extension and parabola make it possible to probe these difficult locations from a distance to isolate the leak.



The Model 9061 Ultrasonic Leak Detector comes complete with a hard-shell plastic case, headphones, parabola, tubular adaptor, tubular extension and 9 volt battery.

## Find One Leak - Pay For Your Ultrasonic Leak Detector

Consider one small leak that is equivalent to a 1/16" (1.6mm) diameter hole. At 80 PSIG (5.5 BAR), it consumes 3.8 SCFM or 108 SLPM.

**Most large plants know their air cost. If you don't know your actual cost per 1,000 SCF, a reasonable average is \$0.25 per 1,000 SCF (28,329 SL).**

Dollars consumed per hour = SCFM consumed x 60 minutes x cost/1,000 SCF

= 3.8 x 60 x \$0.25/1,000

= \$0.06 per hour

= \$1.44 per 24 hour period

= \$10.08 per week

= \$524.16 per year