

USER INSTRUCTIONS FOR THE FLEX.US ULTRASOUND DETECTOR

We would like to thank-you for purchasing the robust and reliable “FLEX.US” Ultrasonic Leak Detector. You have invested in the newest addition to SDT’s family of easy-to-use ultrasonic products. The FLEX.US is an extremely versatile tool for the detection of leaks in compressed air systems, pneumatic brake systems, vacuum systems, pressurized gas storage, and steam traps. Use your new FLEX.US to verify the tightness integrity of containers, trucks, buses, cars, storage systems, building envelopes, containment walls, tanks, recreational vehicles, and more...

How it works:

- The FLEX.US Leak Detector works like a super microphone, sensitive only to high frequency ultrasounds.
- A sensitive piezoelectric crystal is used as a sensor element. Minute high-frequency sound waves excite or “flex” the crystal, creating an electrical pulse that is amplified and then “heterodyned” or translated into an audible frequency that the technician can hear through a pair of noise-reduction headphones.
- As a leak passes from a high to a low pressure, it creates turbulence. The turbulence generates a high-frequency sound component which is detected by the sensitive piezoelectric element, allowing the technician to quickly guide the instrument to the loudest point in order to pinpoint the leak
- The FLEX.US indicates the presence of a leak by producing a quality signal that is truly representative of that leak. In fact, each leak has its own unique “sound print”. Some detectors merely produce an electronic “beep” when an ultrasonic signal is present. An operator has no way of knowing if the source of that beep is a leak or some other ultrasonic phenomenon.

Method of use:

- For listening comfort while performing a leak survey, the fingertip volume control gives instant and precise adjustment to instrument sensitivity for more effective and safe inspections.
- The FLEX.US is based on the successful and popular design of SDT’s famous “Flexible Sensor”. It consists of an ultrasonic sensor mounted at the end of a flexible metal tube. This tube can be bent and twisted in multiple directions. Its diameter is small enough to perform inspections through tight access holes and inside cabinets. A precision focus tube is mounted over the sensor to increase the accuracy of detection and eliminate competing parasitic noise.
- A red LED shows the unit is operational. If the LED does not illuminate, check that the batteries have sufficient power, and replace if necessary.

Non-continuous operation - - -

- 1 Slide the small switch on the right of the unit up to the top.
- 2 Maintain pressure on the yellow button to keep the unit operating.
- 3 To increase the volume (sensitivity) of the FLEX.US, push the (+) side of the yellow button (7 levels). When the desired sensitivity is reached, hold the button in the

down position to begin your survey. Leaks are generally found by moving the detector back and forth and up and down in the direction of the leak source.

- 4 As soon as you hear the typical “hissing” sound of a leak, move towards the source. Remember that ultrasound travels through the air in a directional pattern. The source of the leak is therefore easy to pinpoint by following the loudest signal.
- 5 As you near the source of the leak, the volume in the headphones may increase dramatically. Reduce the sensitivity of the detector by pushing the (-) side of the yellow button to return the FLEX.US to a comfortable listening level.
- 6 To turn off the detector, release the yellow button.

Continuous operation _____

- 1 Slide the small switch on the right side of the unit down to the bottom. The ON LED will light up.
- 2 Follow steps 3, 4 and 5 described above.
- 3 Slide the switch at the side up to the top to halt operation. The LED will go out.

Some comments:

- The volume of the FLEX.US will always remain at the previous level the next time it is switched on.
- Tightness integrity of closed volumes (cab of a vehicle, cockpit of an aircraft, building envelope, etc.) is performed by using the FLEX.US in conjunction with the SDT 200mW Bionic Transmitter (optional accessory). The procedure is as follows:
 - Place the transmitter inside the volume to be tested.
 - Switch the transmitter on and close all hatches/doors.
 - Using the method described above, adjust the volume of the FLEX.US to the signal from the transmitter.
 - Scan the FLEX.US sensor around the seams of the volume to be tested.
 - The volume is considered to be tight if the sound levels remain constant around the entire seam. A leak is indicated by a sudden increase in volume.
- The FLEX.US sensor is not waterproof. Exposing it to water or directly to steam may cause damage. It cannot be immersed in water. The sensitivity of the equipment is negatively affected if the sensor becomes damaged in any way.
- The FLEX.US is equipped with a special headset that employs excellent external noise attenuation for use in extreme noise areas. The headset represents the best technology available for this kind of instrument. Using any other headset than the one shipped with your FLEX.US can cause internal damage to the detector, and automatically voids the warranty.



Technical specifications:

FLEX.US DETECTOR

Controls:	- Continuous or non-continuous operation switch. - Silicone rubber button to control stop-start non-continuous operation and volume adjustment.
Amplification:	7 levels: 20, 30, 40, 50, 60, 7 and 80 dB.
Ultrasound sensor:	Open sensor with a 16 mm (1/2"Ø) diameter (19 mm - 3/4"Ø - exterior), central frequency of 40 kHz.
Detected frequencies:	38.4 kHz, ± 2 kHz (- 3dB).
Audio output:	Stereo jack connector of 6.35 mm (1/4") (use only the headset supplied with the unit).
Power:	Two alkaline AA batteries, 1.5 V. Rechargeable batteries can also be used but the usage time will be reduced.
Usage time:	± 20 hours. This can vary based on several variables including the charge of the battery in the detector, the level of amplification used and the quality of the batteries.
Body:	Made with machined and assembled sheets of high impact polystyrene, it is also shock resistant.
Dimensions:	Body: 170 x 42 x 31 mm (6.70 x 1.65 x 1.22 inches) Flexible tube length: 400 mm (15.75 inches).
Weight:	412 grams with the batteries (14.53 ounces).
Operating temperature range:	From -10°C to +50°C / 14°F to 122°F.

Conditions of the guarantees:

Regardless of all our general conditions of sale, the guarantees applicable at the date of delivery will be the following:

- 2 years on the FLEX.US detector. This guarantee implies the free replacement of all parts accepted as being defective, either from material defects or defective manufacturing. It does not apply in the case of improper use, lack of maintenance, or unauthorised repairs or modifications.
- 2 years on the SDT 200 mW transmitter with the same conditions as stated above.
- 6 months for the internal battery provided with the SDT 200 mW transmitter and charger.

In the event of repair or servicing of any of these devices, the costs for packaging and transport both to and from our premises will be borne by the client.

SDT 200 mW TRANSMITTER

Controls:	ON/OFF button with an indicator light. Selection button for transmission strength, lower and higher (+ 20 dB).
Frequency:	Two frequencies: 39.2 and 39.6 kHz.
Power:	9V DC / 100 mAh NiCad battery included. It is rechargeable on the device (6 hours to charge).
Usage time:	± 4 hours at 20°C (68°F). Operating light indicates battery charge.
Body:	Cast aluminium
Dimensions:	108 x 35 x 40 mm (4.25 x 1.37 x 1.57 inches).
Weight:	230 grams (8.11 ounces).
Operating temperature range:	From -20°C to +50°C / -4°F to 122°F.

CHARGER FOR THE SDT 200 mW

Output power:	9.6 V; 120mA max.
Body:	Polyphyloxide (PPE).
Dimensions:	75 x 50 x 75 mm (2.95 x 1.97 x 2.95 inches).
Weight:	225 grams (7.94 ounces).

The specifications for this device correspond to the current situation to the best of our knowledge. Our efforts in research and development are continuous and therefore these specifications are subject to change without notice.

In no case will SDT INTERNATIONAL accept liability or be held responsible for the consequences of and/or any accident that occurs through the use of this material.

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