

EP LEAK SEEK ®



Introducing the latest generation of portable EP ultrasonic detectors. With this new electronic technological age opens new and even better possibilities of detecting leaks in compressed air and vacuum installations, etc., as well as detecting mechanical faults in bearings, gears, etc. The results of both of these operations achieves big savings in; energy costs and maintenance costs ~ reduces the possibility of any uncontrolled production stops.

Leak detection:

Ultrasonic sensors detect the disturbance (Ultrasound: 16 – 100 kHz) caused by turbulent flow from compressed air or any gas, which is produced by a leak. These high frequency sounds are heard through the EP electronic detector and converted into electrically and acoustic signals, which allows the detection of wasteful leaks. Audible noises from the surroundings are filtered off so the EP devices can also be used in noisy areas, when production is running.

Leak detection in systems without pressure can be made with an EP ultrasonic transmitter that transmits pulsating ultrasonic. The transmitter is placed inside the item to be examined, which is then closed. Then the user can examine the item from the outside and easily find any leaks.

Mechanical malfunctions:

A machine or another propellant loses its effectiveness if or when mechanical malfunctions occur. Often this means reduced production, or at the worst, an unintended and expensive production stop. It is therefore imperative to be able to quickly locate a mechanical malfunction or in some cases to make a systematic monitoring of essential machine parts to always be able to make a controlled production stop with all the economical advantages this entails (see more details at the back of the page).

Applications:

Leak detection:

- Compressed air
- Gasses
- Vacuum
- Steam
- Exhaust systems
- Electrical systems
- Boxes, tanks, etc.

Mechanical trouble shooting:

- All moveable parts in machinery, such as:
- Bearings
 - Gearboxes, etc.

*Quick, simple and environmentally friendly
and can even be used in very noisy areas – Spraying is over!*

EP LEAK SEEK® - Data sheet

Contents / EP unit	EP541	EP542	EP2000
EP Detector	EP541	EP542	EP2000
Dimensions (cm)	23x6x3	23x6x3	23x8x3
Weight (g) – EP detector	315	368	469
EP911 Headphones	X	X	
EP921 Hearing Protector			X
LED Indication	X	X	X
Directional probe	X	X	X
Stethoscope Stick		X	X
Clip			X
AUX Port			X
Calibration (0-35dB)			X
Auto Power Off			X
Battery working hours	14	14	20
Metal suitcase (41x32x14cm)	X	X	X
Weight (g)– Total unit	2100	2300	2600
Normal Warranty	X	X	X
CE marked	X	X	X



EP542 with directional probe and stethoscope stick
EP512 ultrasonic transmitter (Accessory)

Main data	
Leak detection	EP541 - EP542 - EP2000
Mechanical detection	EP542 - EP2000
Frequency of measurement	40 kHz (+/- ½ kHz)
Battery	1 x 9 V ZnCl Battery
Distance (Min/Max)	0 - 4 meter
Temperature during use	0 – 50 °C
Temperature during stock	0 – 50 °C (without battery)

Directional probe:

Suits all models. It is used for separation of close-set leakages and for leak detection at a distance.

Angle of detection:

EP unit without directional probe: 30 degree

EP unit with directional probe: 3 degree

Calibration:

EP2000 can be calibrated for e.g. ultrasonic room noise (0 – 35 dB).

EP512 ultrasonic transmitter:

Dim.(cm) / weight (gr): 13x6x3 / 223

Frequency: 40.000 Hz

Control of tightness (e.g.):

Range: 22m using EP542, 27m using EP2000

Metal tank: Max app. 1000 litre

Auto: Windows, sunroofs, wind noise, etc.

Mechanical malfunctions:

As a “mechanical malfunction feeler” the EP2000 and EP542 picks up interference from movable parts through a stethoscope or on a clip. The stethoscope only “listens” to low-frequency mechanical vibrations and can also be used in noisy areas.

For the EP2000 it is also possible to construct a permanent measure removal point e.g. a built-in piezo component with a connection plug at a certain machine part that is wished supervised so that the measuring can be monitored.

Air leak costs (7 bar/365 days)	Ø 1 mm	Ø 2 mm	Ø 3 mm
Per minute	73.8 litre	297 litre	668 litre
Per 24 hours	105.6 kbm	427.3 kbm	962 kbm
Expenses at 0,033€/kbm	1.285 €	5.198 €	11.704 €
Expenses at 0,020€/kbm	771 €	3.119 €	7.156 €

Energy Efficiency www.energy-efficiency.org.uk states: “Compressed air ~ a 5mm diameter hole in an airline costs around £1,400 per annum”.

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...finds leakages and mechanical malfunctions!

APPLICATIONS

Leak detection:

EP equipment finds leakages relating to:

- compressed air systems, vacuum -, gas - and steam installations
- automotive (Exhaust systems, Window/door sunroof seals, trunk/boot compartments, compressed air brake line)
- vessels, cylinders, tanks, enclosures, etc.

But also locates:

- arcing and corona discharge in electric systems

Mechanical malfunctions:

EP equipment finds malfunctions in:

- movable parts in machinery
- e.g. bearings, gearboxes, etc.



EP2400



EP449



EP541A



EP542A



EP641

SEE THE COST OF AN AIR LEAKAGE...

Air leak costs (7 bar/365 days)

	Ø 1 mm	Ø 2 mm	Ø 3 mm
Per minute	73.8 litre	297 litre	668 litre
Per 24 hours	105.6 kbm	427.3 kbm	962 kbm
Expenses at 0,033 €/kbm	1.285 €	5.198 €	11.704 €
Expenses at 0,020 €/kbm	771 €	3.119 €	7.156 €

LUCKILY IT'S SO EASY TO FIND THESE LEAKAGES...



ACTIVATION



DETECTION



REPAIR



ULTRASONIC DEVICES – DATA SHEET

EP Detector Set	EP541A	EP542A	EP641	EP2400	EP449
EP Detector	541A	542A	641	2400	449

Main data					
Leak seek / ultrasonic	Analogue	Analogue		Analogue	
Leak seek / ultrasonic			Digital	Digital	
Mechanical fault location – internal		1 channel			
Mechanical fault location – external				1 channel	4 channels
Frequency of measurement /Hz	40.000	40.000	40.000	40.000	
Battery 9 V Alkaline	1	1	1	1	1
Distance (leakage) - metre	0 – 2,5	0 – 2,5	0 – 1,5	0 – 6	
Working temperature, °C	0 – 50	0 – 50	0 – 50	0 – 50	0 – 50
Storage Temperature (excl. battery), °C	0 – 50	0 – 50	0 – 50	0 – 50	0 – 50

Technical data					
Dimensions (cm)	23x6x3	23x6x3	ø3,5x19	23x8x3	23x6x3
Weight (g) – detector	336	342	148	455	343
EP911 Headphone	1	1			1
EP921 Hearing Protector	*	*		1	*
Alarm – visual / audio			Yes	Yes	
LED scale – points	10	10		20	
AUX port				1	
Auto Power Off (minutes)			2	20	20
Directional Probe (standard)	1	1	3	1	
Directional Probe (flexible)	*	*		*	
Ultrasonic leak detection sensor – external					*
Stethoscope Stick – internal		1			
Stethoscope Stick – external				1	1
Stethoscope Clip – external				1	4
Stethoscope sensor / thread – external					*
Adjustment of sensitivity				Yes	
Battery working hours	15	15	20	14	12
Metallic carry/storage case	1	1		1	1
Plastic carry/storage case			1		
Weight (kg) – total	2,2	2,3	0,5	2,7	3,1
Warranty (2 years)	Yes	Yes	Yes	Yes	Yes
CE Marking	Yes	Yes	Yes	Yes	Yes

*Accessories

Mechanical malfunctions (EP542, EP2400, EP449)

Mechanical vibrations / noise is measured and converted via a piezo element into electronic and acoustic signals. This makes it possible to carry out a subjective evaluation of a mechanical malfunction by listening or continuously monitor the problem from a fixed sensor.

Terminology:

Hand held stethoscope is standard

Stethoscope clips for more fixed detection (EP2400 + EP449)

Sensors with threaded fitting for optimised measurements (EP2400 option)

Individual sensors (EP2400 option)

Adjustment of sensitivity for fixed reference (EP2400)

Noise filled areas:

Connect EP921 Hearing Protectors (standard in EP2400 unit)

Proposals:

If production is very dependent on certain machinery, it can be wise to carry out a systematic monitoring of a machine part with a bolted on sensor. In this way, if vibrations change considerably from an essential bearing e.g., to plan a production downtime without disruption.

Advantages / benefits:

Machinery, etc. (EP542 / EP2400): Find the mechanical malfunction before it creates big costs from expensive repairs and from loss of production.

Automotive (EP449):

Quick discovery of mechanical fault that drivers may detect during driving from uncomfortable noises in the car. New car owners are very critical towards this type of vibration or noise and it is very suitable to find and correct the problem as soon as it is reported.



Leak detection and the principle of ultrasonic (All products excl. EP449)

EP sensors detect the ultrasonic disturbance (ultrasound: 16–100 kHz) caused by turbulent flow from air or any gas, which is produced by a leak. These high frequency sounds, non audible for human beings, are heard through the EP electronic detectors and converted into electronic and acoustic signals, which allows the detection of wasteful leaks. Audible noises from the surroundings are filtered off so the EP devices can also be used in very noisy areas, when production is running.

Terminology:

Analogue leak detection: High frequency ultrasound audible in headphones/hearing protectors via detector

Digital leak detection: High frequency ultrasound audible/visible direct from detector without headphones

Adjustment: If needed, irrelevant high frequency ultrasound are filtered off (EP2400) for optimum leak detection in difficult production facilities

Internal / external sensor: Internal sensor is standard. External sensor can be connected under tight conditions (EP2400 option).

Directional probe(s): Detection of close-set leakages and leak detection at a distance is improved by putting on a directional probe.

Seal control in enclosed volume without gas pressure is possible with a EP512 Ultrasound Transmitter in conjunction with an EP Detector

Noise filled areas:

Connect EP921 hearing protectors (standard in EP2400 unit).

Proposals:

Compressed air and vacuum leakages, as well as gasses, are very expensive, therefore:

Carry out regular leak seek procedures on machines, couplings, actuators, pipes, tools, etc. in the same way as regular machinery maintenance is desirable.

Advantages / benefits:

Very quick leak detection during normal working hours even with loud noises in the surroundings.

Carry out the repair, which is often simple and easily done on the spot, to get the economical benefit of huge energy savings immediately.



EP Partner:

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