EXAIR®

MANUFACTURING INTELLIGENT COMPRESSED AIR® PRODUCTS SINCE 1983



COAT



COOL



CONSERVE



CLEAN



CONVEY

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The digital home of Intelligent Compressed Air® products for industry



Where you can

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- **Watch product videos** to learn more about the features and benefits of our engineered products
- Quickly **order online** with a purchase order or credit card (US & Canada)
- **Access product presentation slides** you can use to educate others
- **Find International Distributors** all across the world



Access our Knowledge Base to

- **Download 3D models** and CAD drawings in multiple formats to place into your drawings
- **Calculate air savings and ROI** to see how quickly EXAIR products will pay off
- Search our **Case Study Library & Applications database** and become familiar with how our products solve problems
- **Use our product FAQ's** for quick access to our most common questions
- Learn about our free **Efficiency Lab** service and use it to **determine air and money savings** you can achieve when installing EXAIR engineered solutions
- Collect compressed air data and pipe sizing recommendations
- **Find** Flow, Force and Heat conversions



Visit our PDF library and download

- Electronic files of **the entire catalog** or individual sections
- **Installation and Maintenance Guides** on every EXAIR product
- Our current **price list** to have all product prices in one convenient location
- EXAIR's **Air Nozzle Blowoff Guide** to see the details on our enormous selection of sizes, materials and performance options



Follow our blog for 5 new entries a week and learn

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- The methodology and results of critical mathematical formulas which help determine money savings, air savings, performance benefits and more
- New product releases before they reach our catalog or website
- More about EXAIR, our team and community involvement
- **Go to** blog.exair.com



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EXAIR Optimization

Minimize compressed air use and detect wasteful leaks

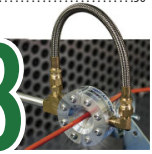
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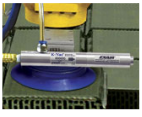


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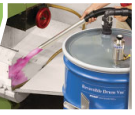


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*5 Year Warranty applies to compressed air products only. A 1 Year Warranty applies to all accessories and electrically powered products.

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An INTELLIGENT COMPRESSED AIR® Product

Intelligent Compressed Air® products are identified throughout this catalog that can help your plant save tens of thousands of dollars over the course of a single year. *The Best Practices for Compressed Air Systems* manual published by the Compressed Air Challenge® recommends products like the Super Air Knife™, Super Air Amplifier™, and the family of Super Air Nozzles™ for energy conservation. Many of the products shown offer unique ways to solve common industrial problems using compressed air. Compressed Air Challenge is a registered trademark of Compressed Air Challenge, Inc.

ENERGY STAR PARTNER

EXAIR has partnered with Energy Star, a voluntary program of the U.S. Department of Energy and the Environmental Protection Agency. Energy Star offers energy efficient solutions to help save money while protecting the environment for future generations. EXAIR has implemented improved energy management practices and technologies throughout our facility, including energy efficient lighting, HVAC systems, and electronic thermostats. EXAIR's participation in this program underscores our commitment to conserving energy.

EXAIR products are subject to ongoing development. Specifications are subject to change without notice.
Some products in this catalog are covered by U.S. Patent #5402938, #8153001, #8268179, #D903,817 and #9156045, and others may be U.S. Patent Pending.
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EXAIR's Intelligent Compressed Air® products vs Your current installation

EXAIR's FREE Efficiency Lab service determines how much air and dollar savings you will achieve by installing one of our Intelligent Compressed Air products.

How does the Efficiency Lab work?

Our Efficiency Lab service begins with receiving a sample of the product(s) you currently use for your application. One of our qualified Application Engineers will use calibrated testing equipment to compare the performance of your existing product(s) to an EXAIR engineered solution. These tests will determine air consumption, noise levels and force. The test results will then be published in a comprehensive report, which includes a cost savings analysis, and be provided to you. For most applications, EXAIR products can help you improve application efficiency AND typically pay for themselves in a matter of weeks.

How can I get a product tested for free?

To participate in our FREE Efficiency Lab please contact one of our Application Engineers and get the details about sending us your product(s).
You may reach an Application Engineer by phone at (800) 903-9247 or (513) 671-3322. You can send an email to lab@exair.com or visit our website and take advantage of our live help at www.exair.com.

Unable to send your product to EXAIR's Efficiency Lab?

If it is not possible to send us your product, we have a one page Product Efficiency Survey on our website (*exair.com/labdoc*) where you can provide us the details about a current inefficient compressed air application. Fill in the information and click submit. You will hear from one of our Application Engineers within three business days.

Okay, so what is the fine print?

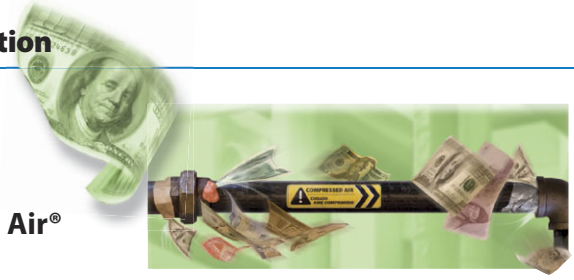
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What about confidentiality?

Yes, EXAIR will keep the results of our Efficiency Lab test and report confidential unless given permission to share that information with others.

Products must be shipped to EXAIR freight prepaid. EXAIR will pay the return shipping via UPS ground.

Optimization



"Go Green" with Intelligent Compressed Air® Products!

It's a worldwide problem. Compressed air leaks and inefficient blowoffs can waste thousands of dollars of electricity per year, affecting your company's production costs and bottom line. For many plants, the leakage alone accounts for up to 30% of the total compressed air cost.

EXAIR can help your company "go green" with six easy to follow steps. It's as simple as finding the leaks, making the repairs, controlling the air use, and upgrading to efficient blowoffs. EXAIR's Intelligent Compressed Air® products can help you accomplish these steps so your compressed air system becomes more efficient, along with the benefit of drastically lowering your energy costs.

Six Steps To Optimizing Your Compressed Air System

1. Measure the air consumption to find sources that use a lot of compressed air.
2. Find and fix the leaks in your compressed air system.
3. Upgrade your blowoff, cooling and drying operations using engineered compressed air products.
4. Turn off the compressed air when it isn't in use.
5. Use intermediate storage of compressed air near the point of use.
6. Control the air pressure at the point of use to minimize air consumption.



1

EXAIR's **Digital Flowmeter™** and the **Digital Flowmeter™ with wireless capability** accurately measure compressed air usage and monitor waste. Trends can be monitored to find excessive air use. Detect leaks at compressed air fittings when the machinery is off. Regular monitoring can detect leaks that develop as the machinery ages. New Pressure Sensing and Hot Tap models are also available.

- **Easy to install - No adjustments or calibrations needed**
- **Digital readout displays actual airflow through pipe**

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2

EXAIR's **Ultrasonic Leak Detector** can help you identify costly leaks in your compressed air system. Leaks can account for 30% of total compressor output! In many cases, finding one small leak can quickly pay for the leak detector.

- **Detects leaks up to 20' (6.1m) away**
- **Accurate in noisy industrial environments**

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3

EXAIR's engineered **Super Air Knives™**, **Super Air Amplifiers™**, and **Super Air Nozzles™** dramatically reduce air consumption and noise. EXAIR's **Digital Sound Level Meter™** can identify and isolate the source of the noisy blowoffs.

- **Low cost - replaces noisy blowers**
- **Improves blowoff performance and safety**

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4

EXAIR's **EFC™** is an electronic flow control that minimizes compressed air use by turning off the compressed air when no part is present. For use on blowoff, drying, cooling, conveying and static elimination operations.

- **Easy hook up; 100-240 VAC with eight function timer**
- **Photoelectric sensor withstands water and dust**

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5

An EXAIR 60 gallon **Receiver Tank** can be installed at the point of high demand so there is an additional supply of compressed air available for a short duration. Meets ASME pressure vessel code.

- **Eliminates fluctuations in pressure and volume**
- **Vertical, space saving design**

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6

EXAIR **Pressure Regulators** permit easy selection of an operating pressure that will allow the air product to work properly without using excessive amounts of compressed air. Reducing the air pressure from 100 PSIG to 80 PSIG reduces energy use by almost 20%.

- **Modular design**
- **Many sizes available**
- **Pressure gauge included**

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For Technical Assistance, Call An EXAIR Application Engineer 1-800-903-9247
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EFC™

Electronic Flow Control minimizes compressed air use for blow off, drying, cooling, conveying and static elimination operations!



Dramatically reduces compressed air costs by turning off the air when no part is present!

Plant Engineering PRODUCT of the YEAR 2006

What Is The EFC?

EXAIR's EFC is a user-friendly electronic flow control for compressed air that is designed to minimize compressed air use on blow off, drying, cooling, conveying and static elimination operations. The EFC combines a photoelectric sensor with a timing control that limits compressed air use by turning it off when no part is present. The timing control permits easy tuning to the application requirements while providing flexibility in sensing distance. The EFC also has eight programmable on and off modes.

Why The EFC?

For most companies, the air compressor uses more electricity than any other type of equipment. One simple operation that uses compressed air can easily waste thousands of electricity dollars per year if not properly controlled. The EFC has been designed to improve efficiency by minimizing compressed air use and, as a result, reduce compressed air costs. It turns on the air only when a part is present and provides just enough air to complete a specific task or operation.

The EFC has an easy electrical connection for voltages from 100 to 240VAC, 50/60Hz making it suitable for applications throughout the world. The compact photoelectric sensor has a sensitivity adjustment and detects objects up to 3' (1m) away. The sensor has superior immunity to noise and inductive loads that are common to industrial environments and installs easily in tight spaces with the supplied mounting bracket. The control system provides flexibility with numerous valve operating modes and timing delays. The polycarbonate enclosure is suitable for use in a wide range of applications including those located in wet environments.

Applications

- Auto body blowoff
- Package cleaning
- Part drying after wash
- Dust removal
- Scrap removal
- Filling operations
- Cooling hot parts
- Neutralizing static
- Cleaning molded parts

Advantages

- Easy electrical hook-up; 100-240VAC, 50/60Hz
- NEMA 4/IP66 environments
- Compact sensor for mounting in tight spaces
- Eight function analog timer for on/off, pulsing and delay control
- Timer setting from 0.10 sec. to 120 hrs.
- Sensor withstands water and dust for accurate readings
- Sensor has superior immunity to noise and inductive loads
- Sensor has long distance sensing up to 3 feet (1m)

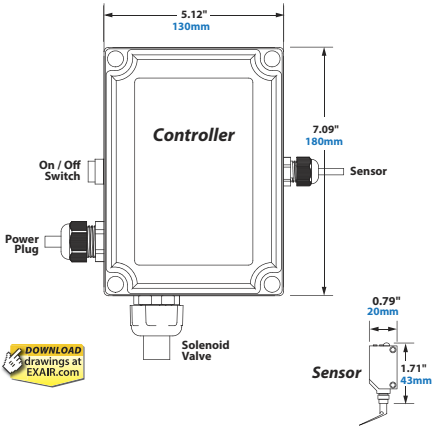


Photoelectric sensor withstands water and dust.

Electronic Flow Control	
Model #	**Description**
9055	EFC Electronic Flow Control, 40 SCFM (1,133 SLPM), solenoid valve, 1/4 NPT
9056	EFC Electronic Flow Control, 100 SCFM (2,832 SLPM), solenoid valve, 1/2 NPT
9057	EFC Electronic Flow Control, 200 SCFM (5,664 SLPM), solenoid valve, 3/4 NPT
9064	EFC Electronic Flow Control, 350 SCFM (9,911 SLPM), solenoid valve, 1 NPT

Models controlling two solenoid valves are available. Contact EXAIR for details.

EFC



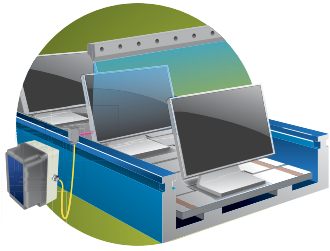
The timing control unit and the photoelectric sensor are equipped with a 9' (2.74m) power cord. The timing control unit is housed in a polycarbonate NEMA 4 / IP66 water tight enclosure. There are four models of the EFC. Each includes the timing control unit and photoelectric sensor with a choice of solenoid valve sizes of 40, 100, 200 and 350 SCFM (1,133, 2,832, 5,664 and 9,911 SLPM).

Specifications	
Power Supply Input	100-240VAC, 50/60Hz, 0.25 - 0.45A
Power Supply Output (To Sensor)	24VDC at 0.65A
Sensor	12-24VDC input, consumes 30mA
Sensing Range	Diffuse reflective to 3' (1 meter)
Enclosure Rating	NEMA 4 / IP66
Temperature Rating	-13°F to 131°F (-25°C to 55°C)
RoHS Compliant	Yes
CE Compliant	Yes

Models controlling two solenoid valves are available. Contact EXAIR for details.

$2,045.22 Annual Air Savings On A Flat Panel Display Blowoff

A flat panel display manufacturer runs 3 shifts. It takes a 40 second cycle to produce one fully assembled display. Prior to packaging, they use EXAIR's 12" (305mm) Super Ion Air Knife at 40 PSIG (2.8 BAR) to blow across the display to remove any static electricity, dust, debris and plastic flash from the panel surface. The air ran constantly. The displays are under the airflow only 10 seconds. Thirty seconds pass until the next display is in position. They manufacture 675 displays per shift (7.5 hrs.) for a total of 2,025 displays manufactured per day.



The timer was set to the "interval" setting when detecting the flat panel displays. The sensor was mounted 1" (25mm) prior to the Super Ion Air Knife blowoff station. When it detected the flat panel, it turned the air on immediately and started the 10 second timing sequence for closing the valve (shutting the air off). In the event the conveyor stopped, the air would no longer cycle on again until the next flat panel was detected.

Old Method

EXAIR's 12" (305mm) Super Ion Air Knife was supplied at 40 PSIG to clean the displays.

At 40 PSIG, EXAIR's 12" (305mm) Super Ion Air Knife consumes 20.4 SCFM (577 SLPM)

Non-stop blowing of 1,440 minutes (24 hours) per day x 20.4 SCFM = 29,376 SCF (831,341 SL) air usage per day.

EFC Solution

The EFC was installed to shut off the compressed air for 30 seconds of the 40 second cycle. (Turns air off for 75% of the cycle.)

Cost Difference

Most large plants know their air cost. If the actual cost is unknown, $0.25 per 1,000 SCF (28,329 SL) is reasonable.

Before the EFC installation:

29,376 SCF/1,000 = 29.38 x $0.25 = $7.34 air cost per day.

With the EFC installed:

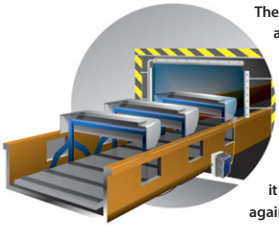
The EFC shut the air off during the three 30 minute shift changes. Upon sensing the display, the timer turned on the compressed air for only 10 seconds of each 40 second cycle (25% of the time).

1,440 minutes per day – 90 minutes between shifts = 1,350 minutes of operation per day.
1,350 minutes x 25% = 337.5 minutes of air per day
337.5 minutes x 20.4 SCFM = 6,885 SCF (194,846 SL) air usage per day.
6,885 SCF/1,000 = 6.89 x $0.25 = $1.72 air cost per day
$7.34 (old air cost) – $1.72 (new air cost) =
$5.62 savings per day x 7 days a week =
$39.33 savings per week x 52 weeks a year =
$2,045.22 savings per year.

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$5,012.28 Annual Air Savings For Pre-Paint Bumper Cleaning

A manufacturer of car bumpers installed a 60" (1524mm) Super Ion Air Knife in the down draft cleaning area prior to their paint booth. The bumpers enter that area in the same orientation as they would when mounted to the automobile, moving at 10' (3m) per minute with a 12" (305mm) space between bumpers. The bumpers are under the blow off for 10 seconds. 6 seconds pass with no bumper in the ionized airflow. The operation runs around the clock with three shifts.



The timer was set to "interval" and the sensor mounted next to the Super Ion Air Knives. When it detected a bumper, it immediately turned on the air for 10 seconds. If the conveyor stopped, it would not turn the air on again until it detected the next bumper.

Old Method

EXAIR's 60" (1524mm) Super Ion Air Knife was supplied at 40 PSIG to clean the bumper.

At 40 PSIG, EXAIR's 60" (1524mm) Super Ion Air Knife consumes 102 SCFM (2,887 SLPM).

Non-stop blowing of 1,440 minutes (24 hours) per day x 102 SCFM = 146,880 SCF (4,156,704 SL) air usage per day.

EFC Solution

The EFC was installed to shut off the compressed air for the 6 seconds where no bumper was present - an on cycle reduction of 37.5%. 1,440 minutes x 37.5% = 540 minutes of off time per day

Cost Difference

Most large plants know their air cost. If the actual cost is unknown, $0.25 per 1,000 SCF (28,329 SL) is reasonable.

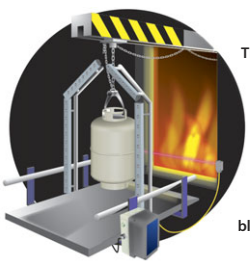
Before the EFC installation:
146,880 SCF/1,000 = 146.88 x $0.25 = $36.72 air cost per day.
With EFC installed: 146,880 SCF x 62.5% on cycle = 91,800 SCF/1,000 = 91.8 x $0.25 = $22.95 air cost per day.
$36.72 (old air cost) – $22.95 (new air cost) =
$13.77 savings per day x 7 days per week =
$96.39 savings per week x 52 weeks per year =
$5,012.28 savings per year.

$3,393 Annual Air Savings On A Tank Blowoff Operation

A company that refurbishes large tanks runs the tanks through an oven on a conveyor line to burn off old paint. Only one tank at a time can be processed and each takes 6 minutes to complete the journey. Super Air Knives are used for blowoff at the exit of the oven.

However, the tank travels through the oven for 5 minutes before it reaches the knives for blowoff. At 80 PSIG (5.5 BAR), the four knives consume 348 SCFM (9,854 SLPM). Once the tanks have been blown off, the conveyor stops, the air is shut off, and a new tank is loaded at the other end.

The operation runs 30 tanks per day, 5 days a week.



The timer was set to "on/off delay". The sensor was mounted at the oven exit (1 minute away from the blowoff station). When the sensor detected a tank, the timer turned the air on for one minute, just as the next tank reached the blowoff station.

Old Method

It takes 6 minutes to complete the process.

6 minutes x 348 SCFM=

2,088 SCF (59,090 SL)
2,088 SCF x 30 tanks =
62,640 SCF (1,772,712 SL)

EFC Solution

The EFC was installed to shut off the compressed air for the 5 minutes where no tank was present (one minute of air on).

1 minute x 348 SCFM =

348 SCF x 30 tanks =
10,440 SCF (295,452 SL)

Cost Difference

Most large plants know their air cost. If the actual cost is unknown, $0.25 per 1,000 SCF (28,329 SL) is reasonable.

Before the EFC installation:
62,640 SCF/1,000 = 62.64 x $0.25 = $15.66 air cost per day.

With the EFC installed:
10,440 SCF/1,000 = 10.44 x $0.25 =
$2.61 air cost per day.
$15.66 (old air cost) – $2.61 (new air cost) =
$13.05 savings per day x 5 days per week =
$65.25 savings per week x 52 weeks per year =
$3,393 savings per year.

An INTELLIGENT COMPRESSED AIR® Product

Digital Flowmeter

Digital Flowmeter™



Monitor compressed air usage and waste!

What is the Digital Flowmeter?

Anyone serious about lowering their energy consumption, operating an efficient plant or optimizing their compressed air system knows that measuring compressed air consumption is the first step toward efficiency. EXAIR's Digital Flowmeter is the easy way to monitor compressed air consumption and waste! The digital display shows the exact amount of compressed air being used, making it easy to identify costly leaks or inefficient air products. Many companies install the Digital Flowmeter on each major leg of their air distribution system to constantly monitor and benchmark compressed air usage.

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2017 Plant Engineering PRODUCT of the YEAR Gold Award

Environmental 2018 WINNER

Why the Digital Flowmeter?

The Digital Flowmeter has an LED display that directly indicates the SCFM or m³/hr volume of airflow through that pipe. Models from 1/2" to 4" iron pipe are in stock. Each Digital Flowmeter is calibrated for the pipe size to which it is mounted. The Digital Flowmeter is designed for permanent or temporary mounting to the pipe. It requires the user to drill two small holes through the pipe using the included drill bit and locating fixture. The two flow sensing probes of the flowmeter are inserted in these holes. The unit seals to the pipe once the clamps are tightened. No cutting, welding, adjustments or calibration are ever required. If the unit needs to be removed, block-off rings are available. NEMA Type 4 (IP66) meters available. Consult the factory.



How it Works?

These flowmeters measure flow by maintaining a temperature differential between the two probes inserted into the compressed air pipe. One probe is kept warmer than the other and mass flow rate is determined by the amount of heat required to maintain the temperature differential. The flow rate, in SCFM or m³/hr, is shown on the large four-digit display. A 4-20 mA output and pulse output permit remote display of the flow value and data collection.

Advantages

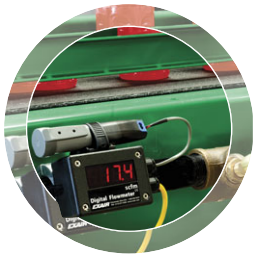
All EXAIR Digital Flowmeters are available in four fundamental versions and offer these advantages over traditional flowmeters.

- No moving parts
- Summing Remote Display and Data Logger available
- Optional RS-485 output serial communication board available
- Sensitive at low flows
- No calibration or set up required
- Includes all components for installation
- Models from 1/2" to 4" Schedule 40 iron pipe in stock
- Models are available for sizes 1/2" to 8" in iron pipe
- Models are available for sizes 3/4" to 4" in copper pipe
- Models are available for sizes 25mm through 101mm in aluminum pipe
- Easy to install

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Flowmeter Versions

These four versions of digital flowmeter can be used on Schedule 40 iron pipe, Type L copper pipe, or the nominal pipe sizes listed on the next page.



Standard The original Digital Flowmeter provides accuracy and an easy to read display of current compressed air consumption, daily consumption or cumulative consumption. Digital Flowmeter with optional Data Logger shown at left.



Wireless Transmit the compressed air data wirelessly over a ZigBee mesh network! A radio module within each meter transmits data to an Ethernet connected gateway. Using the ZigBee mesh network protocol, data can be passed from meter to meter to extend the distance over which the wireless system can operate. Each meter has a range of 100' (30 meters). Setup is simple and consists of installing a meter, installing EXAIR's wireless-to-Ethernet gateway and running the no-charge graphing software available from our website. 128 bit encryption is in place for secure wireless transmissions and they are configured to prevent unwanted joining upon the network.



Hot Tap This meter allows for installation under pressure, eliminating the need to isolate and remove pressure from the pipe it is being installed upon. It incorporates two valves that the probes pass through and a muffler that collects chips from the drilling process. It takes an equally short amount of installation time as the standard meters. Available on 2" and 50mm or larger flowmeters.

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Pressure Sensing Digital Flowmeters monitor pressure and flow. A pressure sensor is mounted between the two flow sensing probes. The pressure signal is provided as a second milliamp output. The display can be configured to show pressure or flow. The pressure signal is also available through wired or wireless serial outputs. The pulse output is replaced with a transistor output configured as a low-pressure alarm when the pressure drops below 50 PSIG. Available on 2" and 50mm or larger flowmeters.

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Digital Flowmeter Accessories

Need an EXAIR Drill Guide?

Basic kits for EXAIR's Digital Flowmeters include all of the components for installation which are: a drill guide to locate the holes for the sensing probes accurately, a drill bit so the holes are the proper size and a hex wrench for installing the pipe clamp securely. If you have purchased a Digital Flowmeter in the past and have these components for the same sized flowmeter, you can order the flowmeter without a drill guide kit by adding the "-DG" suffix to the model number. (Model Number Configurator on page 13). Drill guides can also be ordered separately.



EXAIR's Drill Guide for Digital Flowmeter.

Drill Guides

Model #	Pipe Size
900817	Drill Guide Kit Only, 1/2", 3/4", 1", 1-1/4", 1-1/2" Schedule 40 and Type L Copper (double ring mount)
901281	Drill Guide Kit Only, 2" and 2.5" Schedule 40 and Type L Copper (single ring mount)
900939	Drill Guide Kit Only, 3" Schedule 40 and Type L Copper
900871	Drill Guide Kit Only, 4" Schedule 40 and Type L Copper
900872	Drill Guide Kit Only, 5" Schedule 40 and Type L Copper
901151	Drill Guide Kit Only, 6" Schedule 40 and Type L Copper
902098	Drill Guide Kit Only, 8" Schedule 40 and Type L Copper
901994	Drill Guide Kit Only for 2" and Up Aluminum Compressed Air Pipe

What is the Summing Remote Display?

EXAIR's Summing Remote Display for the Digital Flowmeter has a four-digit LED display that makes it easy to monitor compressed air consumption from a convenient location. With the push of a button, the display cycles to show the current air consumption, usage for the previous 24 hours, and total cumulative usage. The Summing Remote Display shows that flow measurement, the daily and cumulative usage and is frequently used when the Digital Flowmeter is in an obscure, hard to read location. Regular monitoring of the air usage of a machine, process or department makes it possible to save thousands of dollars per year in compressed air waste by identifying the costly leaks or inefficient air products. The Summing Remote Display is CE and RoHS compliant

Summing Remote Display

Model #	Pipe Size
9150	LED Readout displays SCFM
9150-M3	LED Readout displays m^3/hr

It is pre-wired with 50' (15.2m) of cable and is powered by the Digital Flowmeter. Mounting hardware is included.



EXAIR's Summing Remote Display for the Digital Flowmeter.

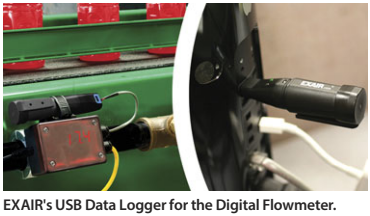
What is the USB Data Logger?

EXAIR's award-winning Model 9147 USB Data Logger connects directly to your Digital Flowmeter and is simple to use. Download the software to configure the Data Logger to record your flow rate from once a second (about nine hours of data) up to once every 12 hours (over 2 years!).

When the Data Logger is removed from the Digital Flowmeter and plugged into a computer, the data can be viewed in the software or exported directly into Microsoft Excel®. The Data Logger is available pre-installed on the Digital Flowmeter. Data Loggers can be added to your Digital Flowmeter by adding a suffix to the model number (Model Number Configurator on page 13). They can also be ordered separately.

USB Data Logger

Model #	Pipe Size
9147	USB Data Logger for Digital Flowmeter



EXAIR's USB Data Logger for the Digital Flowmeter.

What are Block-Off Rings?

Block-off rings are used to safely cover and seal any holes which were drilled for the Digital Flowmeters. They allow for moving a Digital Flowmeter to multiple locations in your piping system.



Block -Off Rings

Model #	Pipe Size	Model #	Pipe Size
901327	Block-Off Rings for 9090 or 9090Z	901332	Block-Off Rings for 9095, 9095-M3 or 9095Z
901328	Block-Off Rings for 9091 or 9091Z	901333	Block-Off Rings for 9096, 9096-M3 or 9096Z
901329	Block-Off Rings for 9092, 9092-M3 or 9092Z	901334	Block-Off Rings for 9097, 9097-M3 or 9097Z
901331	Block-Off Rings for 9094, 9094-M3 or 9094Z	901335	Block-Off Rings for 9098, 9098-M3 or 9098Z
		902099	Block-Off Rings for 90100 or 90100Z

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Digital Flowmeter Model Numbering

1. Choose the **VERSION** of Digital Flowmeter using one of these prefixes

Version

Standard or Wireless	**No Prefix**
Hot Tap DFM (available on 2" and 50mm or larger)	**H**
Pressure Sensing DFM (available on 2" and 50mm or larger)	**P**

2. Choose the **SIZE** of your compressed air pipe. Flowmeters are for Schedule 40 iron pipe, Type L copper pipe and nominal pipe.

Size

Model	Pipe Size	Model	Pipe Size
9090	1/2"	**9099**	5"
9091	3/4"	**90100**	6"
9092	1"	**90101**	8"
9093	1-1/4"	**91025**	for nominal pipe 25mm
9094	1-1/2"	**91040**	for nominal pipe 40mm
9095	2"	**91050**	for nominal pipe 50mm
9096	2-1/2"	**91063**	for nominal pipe 63mm
9097	3"	**91076**	for nominal pipe 76mm
9098	4"	**91101**	for nominal pipe 101mm

3. Choose the **CONFIGURATION** you want by picking one suffix below:

Configuration

Model	Configuration
-DG	... removes Drill Guide
-DAT	... includes Data Logger w/ Drill Guide
-DG-DAT	... includes Data Logger, removes Drill Guide
Z	... Wireless w/ Drill Guide
Z-DG	... Wireless, removes Drill Guide
ZG	... Wireless and Gateway w/ Drill Guide
ZG-DG	... Wireless and Gateway, removes Drill Guide

CU	... for Copper Pipe w/ Drill Guide
CU-DG	... for Copper Pipe, removes Drill Guide
CU-DAT	... for Copper Pipe includes Data Logger w/ Drill Guide
CU-DG-DAT	... for Copper Pipe, includes Data Logger, removes Drill Guide
CUZ	... for Copper Pipe, Wireless w/ Drill Guide
CUZ-DG	... for Copper Pipe, Wireless, removes Drill Guide
CUZG	... for Copper Pipe, Wireless and Gateway w/ Drill Guide
CUZG-DG	... for Copper Pipe, Wireless and Gateway, removes Drill Guide

-M3	... Metric (displays m^3/hr) w/ Drill Guide
-M3-DG	... Metric (displays m^3/hr), removes Drill Guide
-M3-DAT	... Metric (displays m^3/hr) includes Data Logger w/ Drill Guide
-M3-DG-DAT	... Metric (displays m^3/hr), includes Data Logger, removes Drill Guide



Digital Flowmeter

Digital Flowmeter

(Add specific Configuration from page 13)

Model #	Pipe Size	Flow Range*
9090	1/2"	1–90 SCFM (2-153 m^3/hr)
9091	3/4"	1–120 SCFM (2-204 m^3/hr)
9092	1"	1–160 SCFM (2-272 m^3/hr)
9093	1-1/4"	2–150 SCFM (3.6-252 m^3/hr)
9094	1-1/2"	2–200 SCFM (3-340 m^3/hr)
9095	2"	4–400 SCFM (6.6-678 m^3/hr)
9096	2-1/2"	5-500 SCFM (8.4-846 m^3/hr)
9097	3"	12-1200 SCFM (19.8-2040 m^3/hr)
9098	4"	20-2000 SCFM (34.2-3396 m^3/hr)
9099	5"	20-2500 SCFM (34.2-4248 m^3/hr)
90100	6"	50-5000 SCFM (85.2-8496 m^3/hr)
90101	8"	100-6000 SCFM (169.8-10194 m^3/hr)

Digital Flowmeter Type L Copper Pipe

(Add specific Configuration from page 13)

Model #	Pipe Size	Flow Range*
9091CU	3/4"	1–120 SCFM (2-204 m^3/hr)
9092CU	1"	1–160 SCFM (2-272 m^3/hr)
9093CU	1-1/4"	2–150 SCFM (3.6-252 m^3/hr)
9094CU	1-1/2"	2–200 SCFM (3-342 m^3/hr)
9095CU	2"	3–350 SCFM (4.8-594 m^3/hr)
9096CU	2-1/2"	5-500 SCFM (8.4-846 m^3/hr)
9097CU	3"	7-700 SCFM (12-1188 m^3/hr)
9098CU	4"	15-1500 SCFM (25.2-2544 m^3/hr)

* Calibrated range.
Usable range higher.
Please consult factory.

Note: Flow ranges for all Digital Flowmeters in top 3 tables except for Hot Tap Digital Flowmeters, shown below.

Digital Flowmeter - Nominal Pipe Size - Millimeters

(Add specific Configuration from page 13)

Model #	Pipe Size	Flow Range*
91025	25mm	1-150 SCFM (2-254 m^3/hr)
91040	40mm	2-200 SCFM (3.6-342 m^3/hr)
91050	50mm	3-350 SCFM (4.8-594 m^3/hr)
91063	63mm	5-500 SCFM (8.4-846 m^3/hr)
91076	76mm	7-700 SCFM (12-1188 m^3/hr)
91101	101mm	15-1500 SCFM (25.2-2544 m^3/hr)



EXAIR's Digital Flowmeter family is available in many sizes from stock.

Hot Tap Digital Flowmeter – Schedule 40 Iron Pipe

(Add specific Configuration from page 13)

Model #	Pipe Size	Flow Range*
H9095	2"	4-400 SCFM or 7-680 m3/hr
H9096	2-1/2"	5-500 SCFM or 8-850 m3/hr
H9097	3"	12-1200 SCFM or 20-2039 m3/hr
H9098	4"	20-2000 SCFM or 34-3398 m3/hr
H90100	6"	50-5000 SCFM or 85-8495 m3/hr
H90101	8"	100-6000 SCFM or 169-10194 m3/hr

Hot Tap Digital Flowmeter – Type L Copper Pipe

(Add specific Configuration from page 13)

Model #	Pipe Size	Flow Range*
H9095CU	2"	3-350 SCFM or 5-595 m3/hr
H9096CU	2-1/2"	5-500 SCFM or 8-850 m3/hr
H9097CU	3"	7-700 SCFM or 12-1189 m3/hr
H9098CU	4"	15-1500 SCFM or 25-2548 m3/hr
H90100CU	6"	50-5000 SCFM or 85-8495 m3/hr

Digital Flowmeter Specifications				
	Wired	**Wireless**	**Hot Tap**	**Pressure Sensing**
Accuracy	5% of reading plus 1% of range for flows from 10% to 100% of indicated range at air temperatures between 20°F and 120°F.	5% of reading plus 1% of range for flows from 10% to 100% of indicated range at air temperatures between 20°F and 120°F.	5% of reading plus 1% of range for flows from 10% to 100% of indicated range at air temperatures between 20°F and 120°F.	PRESSURE: +/- 2 PSIG maximum. +/- 0.5 PSIG at 68°F.
Operating Pressure	200 PSIG maximum on Sch. 40 iron and on Type L Copper below 3". Consult EXAIR for other materials and higher pressures	200 PSIG maximum on Sch. 40 iron and on Type L Copper below 3". Consult EXAIR for other materials and higher pressures	130 PSIG maximum on Sch. 40 iron. Consult EXAIR for other materials and higher pressures	200 PSIG maximum on Sch. 40 iron and on Type L Copper below 3". Consult EXAIR for other materials and higher pressures
Input Power	250 mA at 24V DC	250 mA at 24V DC	250 mA at 24V DC	250 mA at 24V DC
Output resistance	600 Ohms maximum	600 Ohms maximum	600 Ohms maximum	600 Ohms maximum
Wetted Materials	Stainless Steel, Gold, Thermal epoxy, Viton	Stainless Steel, Gold, Thermal epoxy, Viton	Stainless Steel, Gold, Thermal epoxy, Viton, PTFE, Aluminum	Stainless Steel, Gold, Thermal epoxy, Viton
Ring Material	Aluminum	Aluminum	Aluminum	Aluminum
Display	Four digit LED	Four digit LED	Four digit LED	Four digit LED
Response Time	One second to 63% of change in value at flows above 30% of range	One second to 63% of change in value at flows above 30% of range	One second to 63% of change in value at flows above 30% of range	One second to 63% of change in value at flows above 30% of range
Pressure Range	N/A	N/A	N/A	0-145 PSIG operating range 200 PSIG maximum 145 PSIG full scale of mA output For best accuracy, avoid pressures above 145 PSIG
Compliance	CE and RoHS	CE and RoHS	CE and RoHS	CE and RoHS

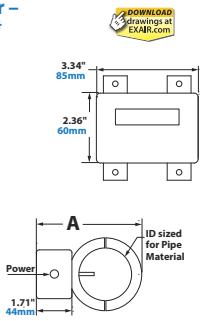
Note: For use with compressed air and nitrogen only.

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Wired, Wireless and Pressure Sensing Flowmeter Dimensions

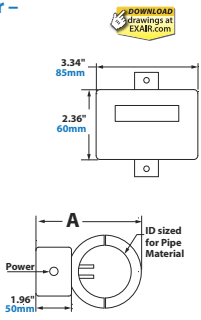
Small Digital Flowmeter – Schedule 40 Iron Pipe**

Series	Pipe Size	A in	A mm
9090	1/2"	3.31	84
9091	3/4"	3.49	89
9092	1"	3.87	98
9093	1-1/4"	4.24	108
9094	1-1/2"	4.62	117



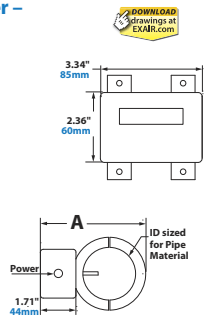
Large Digital Flowmeter – Schedule 40 Iron Pipe**

Series	Pipe Size	A in	A mm
9095	2"	5.34	136
9096	2-1/2"	6.09	155
9097	3"	6.71	171
9098	4"	7.71	196
9099	5"	8.84	224
90100	6"	9.84	250
90101	8"	11.84	301



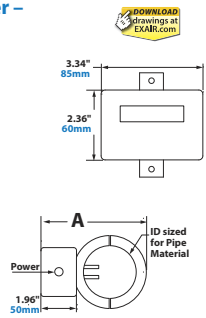
Small Digital Flowmeter – Type L Copper Pipe**

Series	Pipe Size	A in	A mm
9091CU	3/4"	3.49	89
9092CU	1"	3.68	93
9093CU	1-1/4"	3.87	98
9094CU	1-1/2"	4.24	108



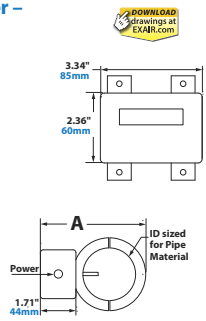
Large Digital Flowmeter – Type L Copper Pipe**

Series	Pipe Size	A in	A mm
9095CU	2"	5.09	129
9096CU	2-1/2"	5.84	148
9097CU	3"	6.34	161
9098CU	4"	7.34	186



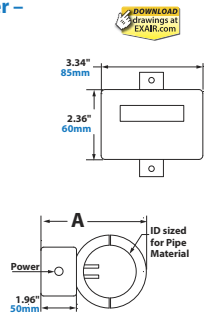
Small Digital Flowmeter – Nominal Pipe**

Series	Pipe Size	A in	A mm
91025	25mm	3.49	89
91040	40mm	4.24	108



Large Digital Flowmeter – Nominal Pipe**

Series	Pipe Size	A in	A mm
91050	50mm	5.1	129
91063	63mm	5.6	142
91076	76mm	6.3	161
91101	101mm	7.3	186

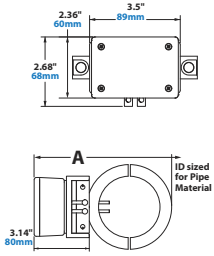


** If dimensions are critical for mounting, please consult the factory

Wired, Wireless, Hot Tap, and Gateway Flowmeter Dimensions

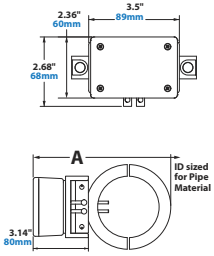
Hot Tap Digital Flowmeter – Schedule 40 Iron Pipe

Series	Pipe Size	A in	A mm
H9095	2"	6.43	163
H9096	2-1/2"	7.20	183
H9097	3"	7.82	199
H9098	4"	8.82	224
H90100	6"	10.95	278
H90101	8"	12.95	329



Hot Tap Digital Flowmeter – Type L Copper Pipe

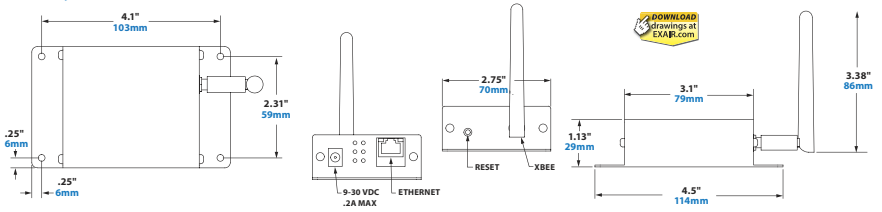
Series	Pipe Size	A in	A mm
H9095CU	2"	6.18	157
H9096CU	2-1/2"	6.95	177
H9097CU	3"	7.45	189
H9098CU	4"	8.45	215
H90100CU	6"	10.45	265



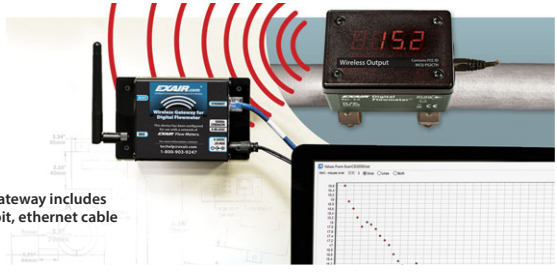


The Hot Tap Digital Flowmeters allow installation when compressed air piping is under pressure. By eliminating the need to isolate and remove pressure from the pipe, these compressed air flowmeters reduce installation time while maintaining safety.

Gateway Dimensions



An INTELLIGENT COMPRESSED AIR® Product



A Digital Flowmeter with wireless capability and Gateway includes a 24 VDC power supply with adapters, 3/16" drill bit, ethernet cable and hole locating fixture.

For Technical Assistance, Call An EXAIR Application Engineer 1-800-903-9247
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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.



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

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.



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

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 ± 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

An INTELLIGENT COMPRESSED AIR® Product

Ultrasonic Leak Detector

Ultrasonic Leak Detector



Locate costly leaks in your compressed air system!

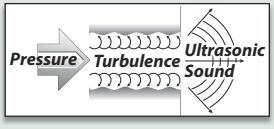
What Is The Ultrasonic Leak Detector?

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.

For Technical Assistance, Call An EXAIR Application Engineer 1-800-903-9247
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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.



Parabola | **Tubular Adaptor** | **Tubular Extension** | **Headphones**

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

ORDER ONLINE at EXAIR.com