



AIR SAVING PRODUCTS

AIR-SAVER
AIR-SAVER-LS

LOCATOR
LOCATOR-EV



ADDING VALUE

RELIABLE

COMPRESSED AIR CONDENSATE MANAGEMENT AND ENERGY SAVING PRODUCTS

Air saving products

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JORC Industrial is a global condensate management specialist of Dutch origin offering condensate drains, oil water separators and air saving equipment to distributors, dealers and OEM's in more than 100 countries. JORC Industrial is dedicated to setting the standard in helping its customers manage their condensate management requirements.

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SAVING AIR IS SAVING MONEY

Chapter 1

INTRODUCTION TO COMPRESSED AIR

Compressed air is used widely throughout industry and is often considered the "fourth utility". Almost every industrial plant, from a small machine shop to an immense pulp and paper mill, has some type of compressed air system. In many cases, the compressed air system is so vital that the facility cannot operate without it. Air compressor systems can vary in size from a small unit of 5 horsepower (hp) to huge systems with over 50.000 hp.

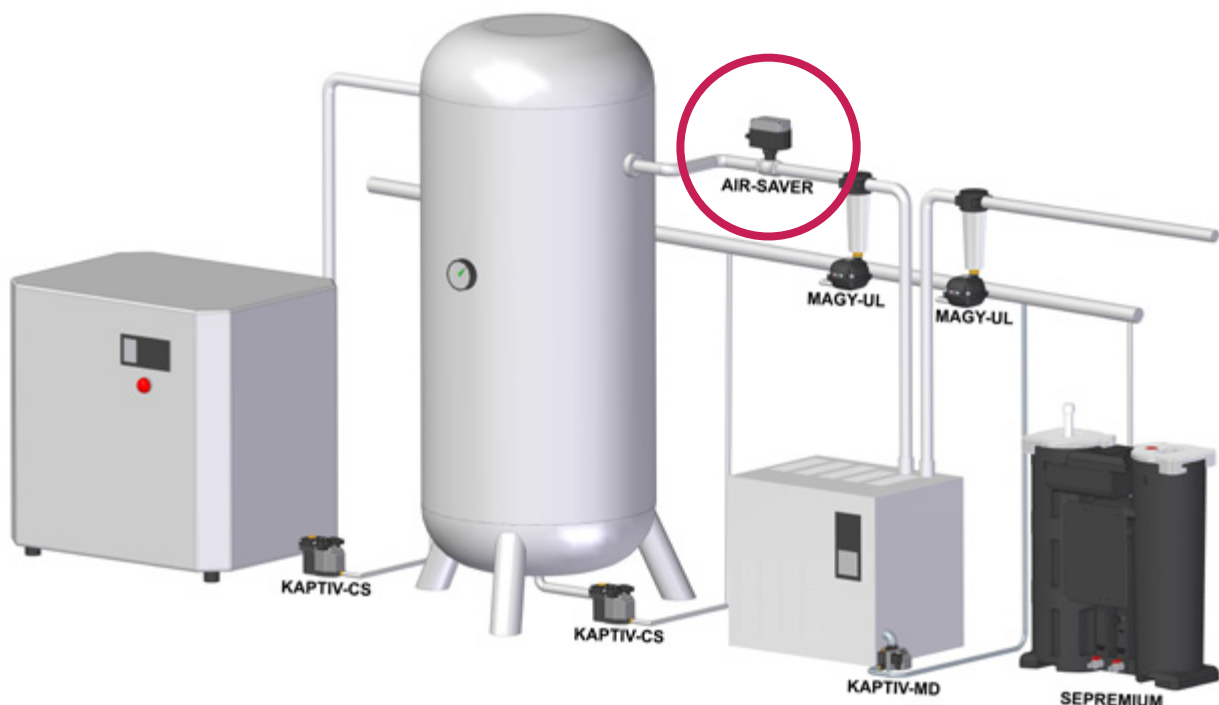
In many industrial facilities, air compressors use more electricity than any other type of equipment. Inefficiencies in compressed air systems can therefore be significant. Energy savings from system improvements can range from 20-50% or more of electricity consumption. For many facilities this is equivalent to thousands, or even hundreds of thousands of euros of potential annual savings.

A properly managed compressed air system can save energy, reduce maintenance cost, decrease downtime, increase production throughput and improve product quality.

Compressed air systems consist of a supply side, which includes compressors and air treatment, and a demand side, which includes distribution, storage systems and end-use equipment. A properly managed supply side will result in clean, dry and stable air being delivered at the appropriate pressure in a dependable, cost-effective manner.

A properly managed demand side minimizes wasted air and uses compressed air for appropriate applications. Improving and maintaining peak compressed air system performance requires addressing both the supply and demand sides of the system and how the two interact. The compressor is the mechanical device that takes in ambient air and increases its pressure. Controls serve to regulate the amount of compressed air being produced.

The treatment equipment removes contaminants from the compressed air and accessories keep the system operating properly. Distribution systems transport compressed air to where it is needed. Compressed air storage can also serve to improve system performance and efficiency.



AIR LEAKAGES, A COMMON PROBLEM

Air leaks are a concern for anyone operating a compressed air system. The average plant with no formal leak management program can have air leaks that can possible waste up to 30% of the total air capacity.

Leaks will cause compressors to run at full load for longer periods of time. The compressors will not only use more energy, but may also need additional maintenance due to the increased loads.

Leaks can give the false impression that additional compressors are required to meet the demand for compressed air.

COMMON LEAK POINTS

- Quick connections fittings have o-rings to seal the hose connections. A damaged or missing o-ring will cause the connection to leak.
- FRL's (filter, regulator & lubricator). Inlet and outlet connections and bottom drainage point can leak.
- The welds found on pipe joints and pipe flanges can leak due to vibrations, age or improper welding.
- Unreliable drains can also be a source of air leaks, because the operating mechanics can get stuck in the "open" position.
- Pipe thread connections, air tools and many more sources can be the cause of air leakages.

LOCATOR(-EV)

The **LOCATOR(-EV)** is an ultrasonic air leak detector and is a necessary part of a leak prevention program.

The **LOCATOR(-EV)** is lightweight and easy to operate. The reliable and accurate detection capacity makes it a highly efficient air leak detector. Air leak turbulence or friction produce high frequency ultrasonic waves and are normally higher than 20 kHz. This is typically above the range of human hearing levels.

The **LOCATOR(-EV)** is easy to use and highly effective at finding compressed air leaks.

AIR-SAVER(-LS)

The compressed air that is stored in the receiver can leak out through the above mentioned sources of air leaks. This is a direct waste of energy and money.

The **AIR-SAVER** and **AIR-SAVER-LS** are typically installed on the air outlet of the air receiver. Alternatively, they are applied in larger factories to close off certain parts of the compressed air system, where during certain parts of the day no compressed air is required.

The **AIR-SAVER** can be programmed to automatically open just prior to the start of a work shift and close just after the end of the work shift.

The **AIR-SAVER-LS** is controlled via an internal relay which is connected to an external switch (i.e. light switch) and separate power supply. By switching on the lights in the production area the **AIR-SAVER-LS** will subsequently open. The saved compressed air flows into the factory compressed air line and the compressor kick-in to produce the air needed to fill the system. At the end of the work-shift you switch off the light(s) and the **AIR-SAVER-LS** will close accordingly.

The **AIR-SAVER** and **AIR-SAVER-LS** are an improvement to any compressed air system with the above mentioned air leak problems and have a fast payback.

Chapter 2

THE VALUE OF AN AIR-SAVER

The **AIR-SAVER** and **AIR-SAVER-LS** are typically installed just beyond the air receiver tank and will assure compressed air savings and significant energy cost reduction.

Compressed air leakages are common and more importantly very costly. Graph A and B (next page) illustrate the value of the AIR-SAVER when installed. A typical installation is illustrated below.

In graph A and B the light blue line demonstrates the operating movements of the compressor, or to put it in other words – **ENERGY USAGE**.

Graph A shows a compressed air system without an AIR-SAVER installed. At 4 pm the working shift is over and the compressed air leakages force the compressor to continually bring the air pressure up to the required level (even though no one is working in this particular example).

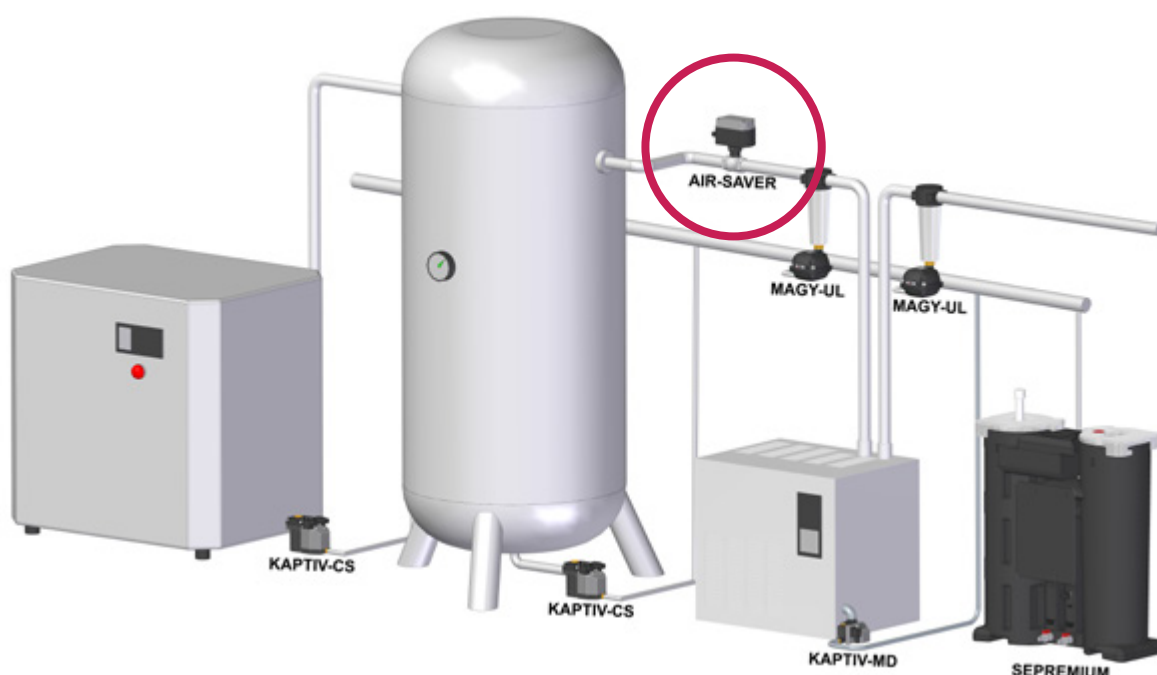
The result is that the compressor kicked in 20 times during the period in which no one was requiring compressed air! Compressed air losses occur through pipe work connection leakages, leaking float type drains, flow meters, etc.

Graph B shows the same compressed air system with an AIR-SAVER installed. The light blue movements are the compressor in running mode. At 4 pm you see that the working shift ends and that the AIR-SAVER is programmed to close.

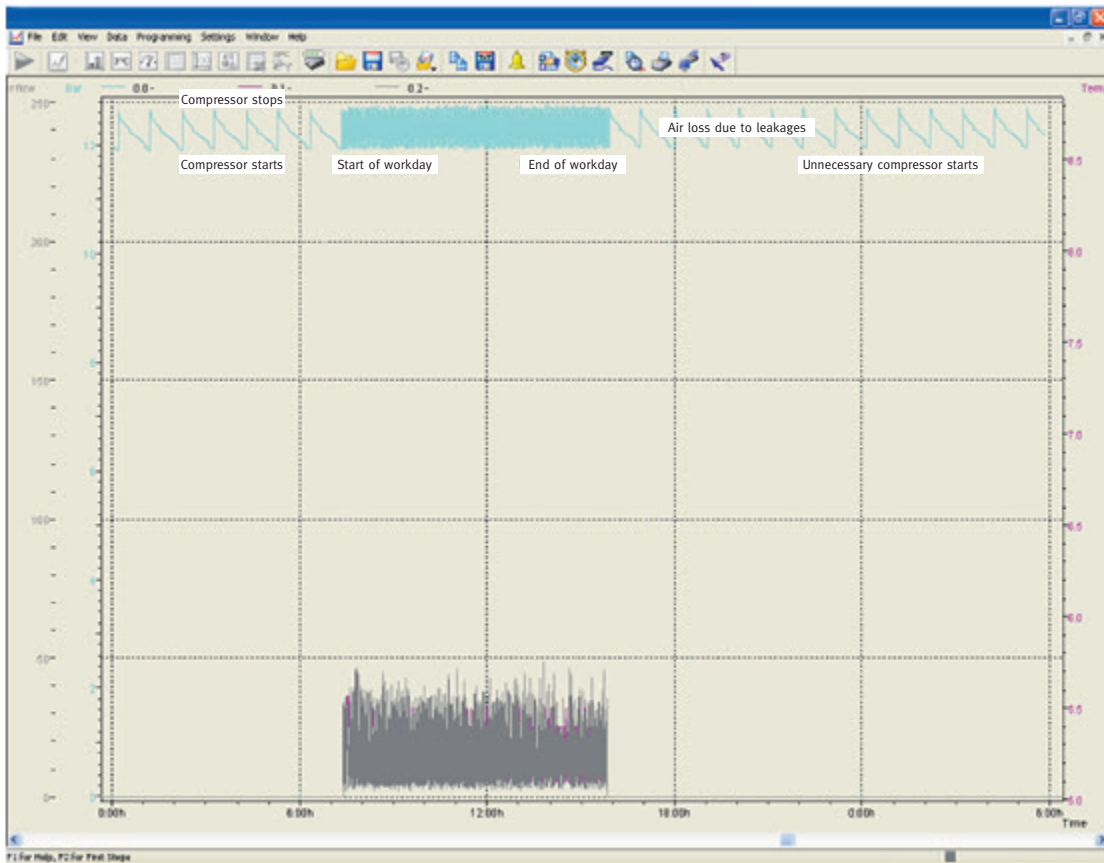
The result is that the pressure in the pipe work beyond the AIR-SAVER is lost as you see the pressure drops to 0 bar. The produced compressed air stored in the air receiver is saved and the compressor does not require to kick on and off to bring the air pressure up to a certain level.

Savings achieved with the **AIR-SAVER** and **AIR-SAVER-LS** are:

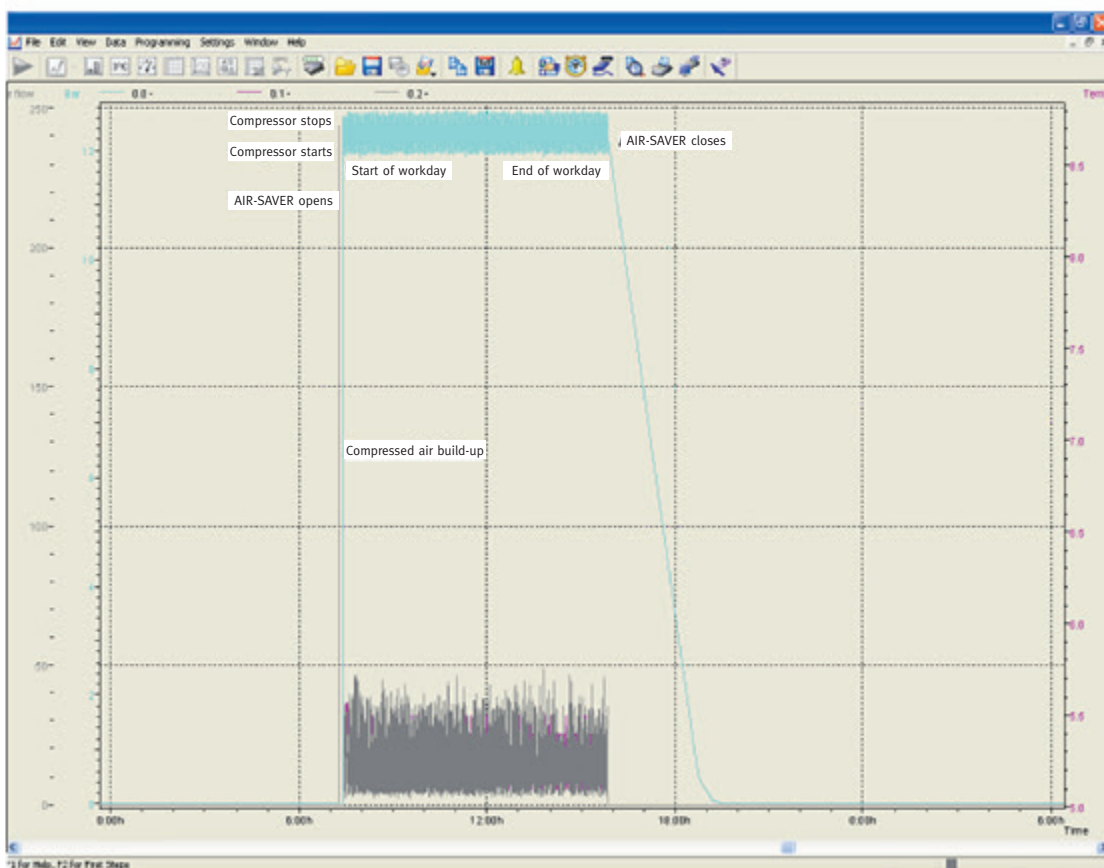
- Valuable and expensively produced compressed air;
- Electricity for running the compressor;
- Wearing parts of the compressor;
- Compressor servicing costs due to unnecessary compressor operating hours;
- Other wearing parts like compressed air filter elements due to unnecessary operating hours.



GRAPH A: COMPRESSED AIR SYSTEM WITHOUT AN AIR-SAVER(-LS)



GRAPH B: COMPRESSED AIR SYSTEM WITH AN AIR-SAVER(-LS)



Chapter 3

AIR-SAVER G1

Compressed air energy saver

A typical compressed air system has air losses through pipe works connections and leaking float type drains etc. By installing an AIR-SAVER G1 the end user will limit air losses.

PRODUCT FEATURES

The AIR-SAVER G1 is typically installed on the air outlet of the air receiver. Alternatively, it is applied in larger factories to close off certain parts of the compressed air system, where during certain parts of the day no compressed air is required.

The AIR-SAVER has proven its worth and saved millions m³ of compressed air around the world. The AIR-SAVER helps end-users save valuable compressed air from escaping unnecessarily, reducing compressor running hours and thus extending its lifetime, saving energy and operating costs.

The AIR-SAVER G1 can be installed in all pipeline systems up to 1". A remote switching kit is available to operate the AIR-SAVER G1 from a distance.

A simple – yet exciting programming module!

The control module offers programming simplicity and exciting display features, offering you visual information and company branding options.



COMMERCIAL BENEFITS

- A potential daily saving of at least one air receiver's worth of compressed air
- No unnecessary compressor start-up during periods when compressed air is not required
- Compressor, dryer and filter activities are reduced during factory closing hours
- Possibility to shut of parts of the pipe line system where compressed air is not needed continuously
- Reduced maintenance requirements and lower power consumption leads to considerable savings on service and energy costs
- Time programmed or remote controlled
- Manual valve opening and closing possible, in case of a power failure

TECHNICAL ADVANTAGES

- Typically installed on the air outlet of the air receiver or alternatively applied to close off certain parts of the compressed air system
- A 3 volt CR2032 (long lifespan) battery saves the entered switching program and actual day and time settings in case of a power cut or failure
- Battery life indication on the display
- Slow valve opening to avoid "water hammer" in pipe line system
- Brass valve, nickel plated
- Compact design - Easy to install

PRODUCT DIMENSIONS



The FLEX function is a very useful feature in overtime situations or shutdowns

PRODUCT SPECIFICATIONS

Min./max. system pressure	0 - 16 bar
Min./max. medium temperature	1 - 100 °C
Min./max. ambient temperature	1 - 50 °C
Supply voltage options	115 VAC or 230 VAC 50/60 Hz.
Power consumption	Approx. 7 W during cycle rotation
Enclosure protection rating	IP54 (NEMA13)
Valve inlet/outlet connections	1" (BSP or NPT)
Valve opening/closing duration	30 sec. (90°)
Valve housing material	Brass valve, nickel plated
Illuminated LCD display	Indicating day, time, valve status, battery life
Battery type	CR2032, 3 volt
Programmable options	Week planner, max. 100 switching points, to be distributed over 1-7 days
Manual valve override	Yes
Remote controllability	Yes (optional)



Multiple display colours offering you the possibility to match your company's house style (or even that of your customer!)



Manual opening and closing of the valve possible, in case of a power failure (manual valve override)



Remote control option, to control the AIR-SAVER from a distance

Chapter 4

AIR-SAVER G2

Compressed air energy saver

A typical compressed air system has air losses through pipe works connections and leaking float type drains etc. By installing an AIR-SAVER G2 the end user will limit air losses.

PRODUCT FEATURES

The AIR-SAVER G2 is typically installed on the air outlet of the air receiver. Alternatively, it is applied in larger factories to close off certain parts of the compressed air system, where during certain parts of the day no compressed air is required.

The AIR-SAVER G2 has proven its worth and saved millions m³ of compressed air around the world. The AIR-SAVER G2 helps end-users save valuable compressed air from escaping unnecessarily, reducing compressor running hours and thus extending its lifetime, saving energy and operating costs.

The AIR-SAVER G2 can be installed in all pipeline systems up to 2". A remote switching kit is available to operate the AIR-SAVER G2 from a distance.

A simple – yet exciting programming module!

The control module offers programming simplicity and exciting display features, offering you visual information and company branding options.

COMMERCIAL BENEFITS

- A potential daily saving of at least one air receiver's worth of compressed air
- No unnecessary compressor start-up during periods when compressed air is not required
- Compressor, dryer and filter activities are reduced during factory closing hours
- Possibility to shut of parts of the pipe line system where compressed air is not needed continuously
- Reduced maintenance requirements and lower power consumption leads to considerable savings on service and energy costs
- Time programmed or remote controlled
- Manual valve opening and closing possible, in case of a power failure

TECHNICAL ADVANTAGES

- Typically installed on the air outlet of the air receiver or alternatively applied to close off certain parts of the compressed air system
- A 3 volt CR2032 (long lifespan) battery saves the entered switching program and actual day and time settings in case of a power cut or failure
- Battery life indication on the display
- Slow valve opening to avoid "water hammer" in pipe line system
- Brass valve, nickel plated
- Compact design - Easy to install



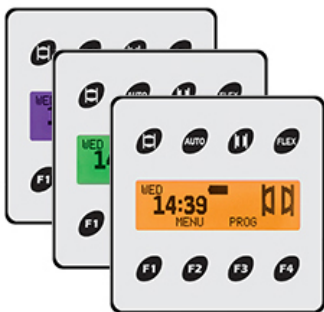
PRODUCT DIMENSIONS



The FLEX function is a very useful feature in overtime situations or shutdowns

PRODUCT SPECIFICATIONS

Min./max. system pressure	0 - 16 bar
Min./max. medium temperature	1 - 100 °C
Min./max. ambient temperature	1 - 50 °C
Supply voltage options	115 VAC or 230 VAC 50/60 Hz.
Power consumption	Approx. 9 W during cycle rotation
Enclosure protection rating	IP54 (NEMA13)
Valve inlet/outlet connections	2" (BSP or NPT)
Valve opening/closing duration	105 sec. (90°)
Valve housing material	Brass valve, nickel plated
Illuminated LCD display	Indicating day, time, valve status, battery life
Battery type	CR2032, 3 volt
Programmable options	Week planner, max. 100 switching points, to be distributed over 1-7 days
Manual valve override	Yes
Remote controllable	Yes (optional)



Multiple display colours offering you the possibility to match your company's house style (or even that of your customer)!



Manual opening and closing of the valve possible, in case of a power failure (manual valve override)

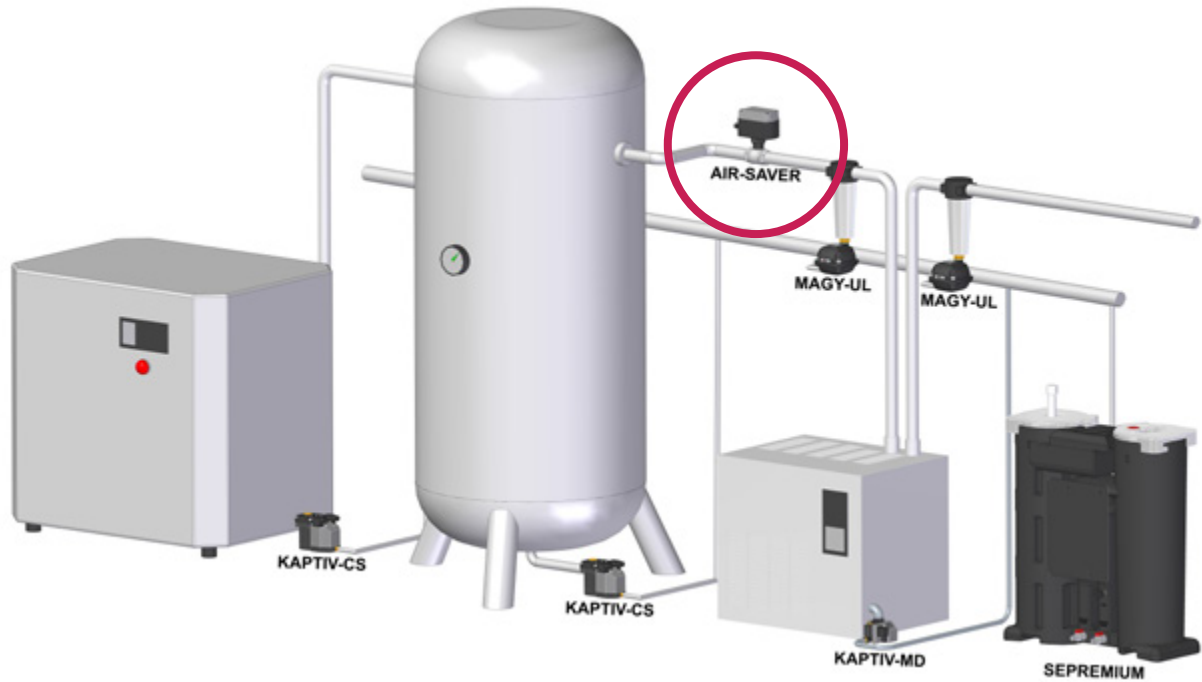


Remote control option, to control the AIR-SAVER from a distance

Chapter 5

INSTALLATION

POSITIONING



The AIR-SAVER typically gets installed after the receiver (air tank). Once closed it retains the compressed air built up in the receiver and also ensures that the compressor does not run unnecessarily during moments when it is not required (after hours, public holidays etc.).

INSTALLATION

Detailed instruction manuals will guide you through the simple installation procedure. Our instruction manuals are designed with many illustrations and simple text. In addition, the JORC instruction manuals are set up in various languages.



ACCESSORIES

REMOTE SWITCHING KIT

The air pipe line is often positioned high up, under the ceiling. Attending to the AIR-SAVER to manually open or close the valve can be time consuming. To simplify this procedure we offer a remote switching kit with 5 meters cable.

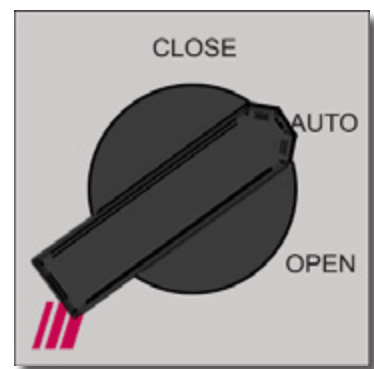
The remote switching kit allows for open/close control at eye level. JORC can supply the AIR-SAVER pre-wired to the remote switching kit or it can be ordered as a separate item.

In the AUTO mode, the AIR-SAVER opens and closes according to the programmed open and close times.

Connecting and installing the remote switching kit is a simple and straightforward procedure, an instruction manual is available.



Replacement valve kits are available



Chapter 6

AIR-SAVER-LS G1

Compressed air energy saver

The AIR-SAVER-LS G1 (Light Switch) is installed in the compressed air line after the air receiver. The AIR-SAVER-LS G1 is controlled via an internal relay which is connected to an external switch and separate power supply.

PRODUCT FEATURES

A typical compressed air system has air loss through pipe work connections, leaking float type drains, etc.

The AIR-SAVER-LS G1 will open the ball valve (slowly) when the relay is switched, allowing compressed air to flow from the air receiver into the compressed air line. After the working shift is over and the relay is switched off, the ball valve closes.

From that point on, all compressed air will remain in the air receiver, rather than being lost through leakages.

The AIR-SAVER-LS G1 can be applied on all pipe-line systems up to 1".

A typical installation example is to connect the AIR-SAVER-LS to a light switch. By switching on the lights in the production area - the AIR-SAVER-LS will subsequently open. The saved compressed air flows into the factory compressed air line and the compressor kicks-in to produce the air needed to fill the system. At the end of the work-shift you switch off the light(s) and the AIR-SAVER-LS will close accordingly.

COMMERCIAL BENEFITS

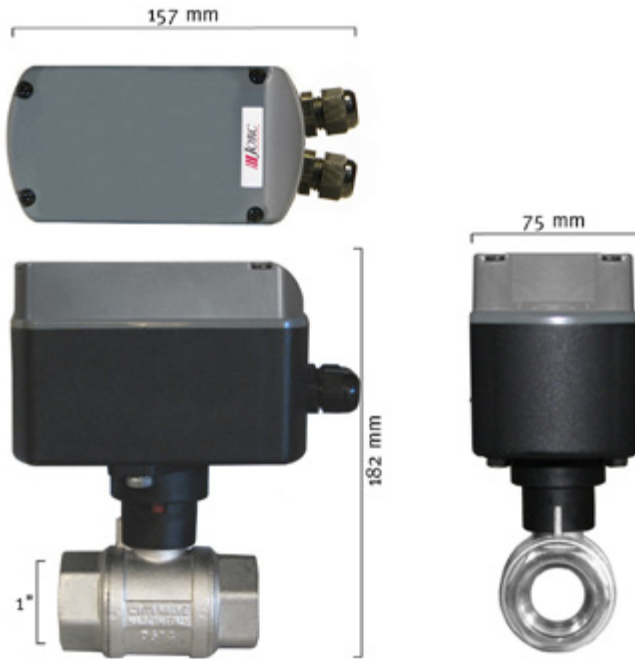
- At least one air receiver's worth of compressed air savings per day
- No unnecessary compressor start-up during periods when compressed air is not required
- Compressor, dryer and filter activities are avoided during factory closing hours
- Manual valve opening and closing possible, in case of a power failure
- Consult JORC for private labelling options

TECHNICAL ADVANTAGES

- Very quick and easy to connect to an external (light) switch
- Slow ball valve rotation 90° in 30 seconds to avoid "water-hammer" when opening and closing
- Brass valve, nickel plated
- Compact design - Easy to install



PRODUCT DIMENSIONS



Manual opening and closing of the valve possible, in case of a power failure (manual valve override)

PRODUCT SPECIFICATIONS

Min./max. system pressure	0 - 16 bar
Min./max. medium temperature	1 - 100 °C
Min./max. ambient temperature	1 - 50 °C
Supply voltage options	115 VAC or 230 VAC 50/60 Hz.
Power consumption	Approx. 7W during cycle rotation
Enclosure protection rating	IP54 (NEMA13)
Valve inlet/outlet connections	1" (BSP or NPT)
Valve opening/closing duration	30 sec. (90°)
Valve housing material	Brass valve, nickel plated
Manual valve override	Yes



Slow ball valve rotation to avoid "water-hammer" when opening and closing of the valve



Consult JORC for private labelling options

Chapter 7

AIR-SAVER-LS G2

Compressed air energy saver

The AIR-SAVER-LS G2 (Light Switch) is installed in the compressed air line after the air receiver. The AIR-SAVER-LS G2 is controlled via an internal relay which is connected to an external switch and separate power supply.

PRODUCT FEATURES

A typical compressed air system has air loss through pipe work connections, leaking float type drains, etc.

The AIR-SAVER-LS G2 will open the ball valve (slowly) when the relay is switched, allowing compressed air to flow from the air receiver into the compressed air line. After the working shift is over and the relay is switched off, the ball valve closes.

From that point on, all compressed air will remain in the air receiver, rather than being lost through leakages.



The AIR-SAVER-LS G2 can be applied on all pipe-line systems up to 2".

A typical installation example is to connect the AIR-SAVER-LS to a light switch. By switching on the lights in the production area - the AIR-SAVER-LS will subsequently open. The saved compressed air flows into the factory compressed air line and the compressor kicks-in to produce the air needed to fill the system. At the end of the work-shift you switch off the light(s) and the AIR-SAVER-LS will close accordingly.

COMMERCIAL BENEFITS

- At least one air receiver's worth of compressed air savings per day
- No unnecessary compressor start-up during periods when compressed air is not required
- Compressor, dryer and filter activities are avoided during factory closing hours
- Manual valve opening and closing possible, in case of a power failure
- Consult JORC for private labelling options

TECHNICAL ADVANTAGES

- Very quick and easy to connect to an external (light) switch
- Slow ball valve rotation 90° in 105 seconds to avoid "water-hammer" when opening and closing
- Brass valve, nickel plated
- Compact design - Easy to install

PRODUCT DIMENSIONS



Manual opening and closing possible, in case of a power failure (manual valve override)

PRODUCT SPECIFICATIONS

Min./max. system pressure	0 - 16 bar
Min./max. medium temperature	1 - 100 °C
Min./max. ambient temperature	1 - 50 °C
Supply voltage options	115 VAC or 230 VAC 50/60 Hz.
Power consumption	Approx. 9W during cycle rotation
Enclosure protection rating	IP54 (NEMA13)
Valve inlet/outlet connections	2" (BSP or NPT)
Valve opening/closing duration	105 sec. (90°)
Valve housing material	Brass valve, nickel plated
Manual valve override	Yes



Slow ball valve rotation to avoid "water-hammer" when opening and closing of the valve

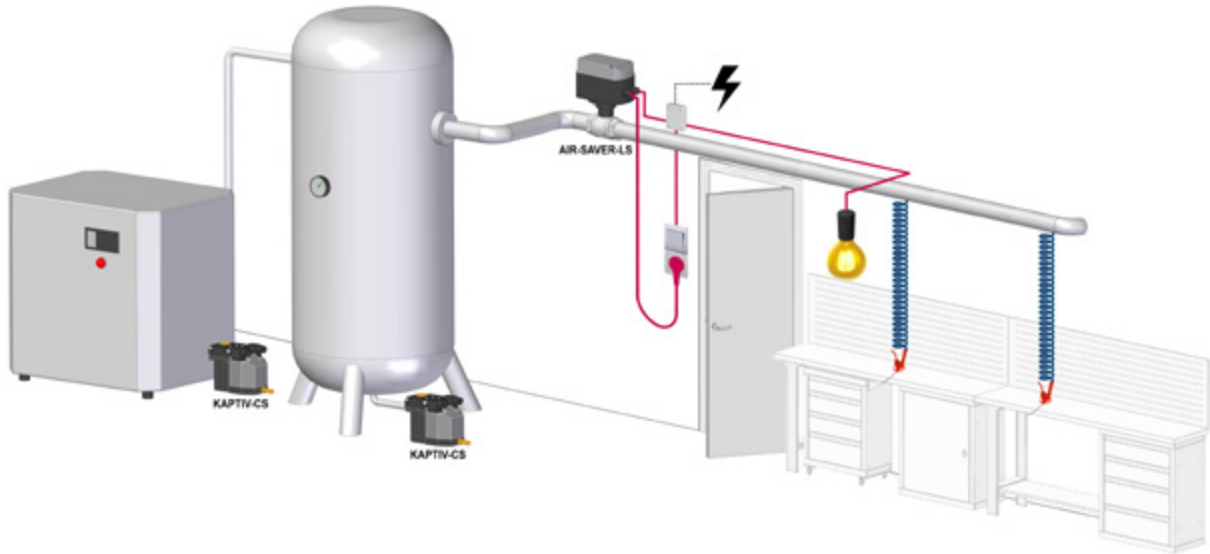


Consult JORC for private labelling options

Chapter 8

INSTALLATION

POSITIONING



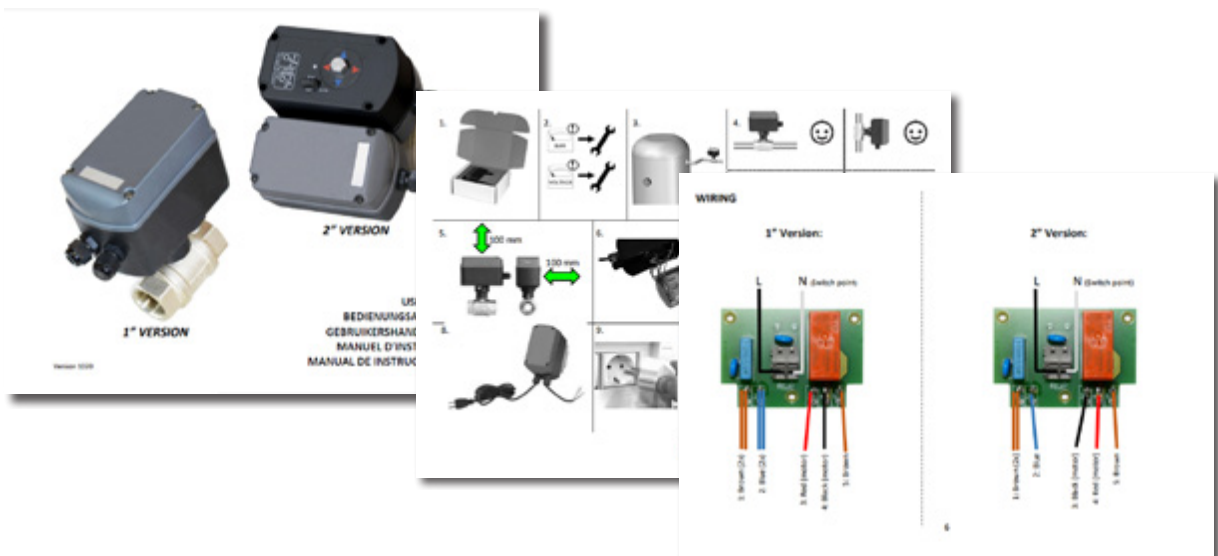
The AIR-SAVER-LS (Light Switch) typically gets installed in the compressed air line after the air receiver. The AIR-SAVER-LS is controlled via an internal relay which is connected to an external switch and separate power supply.

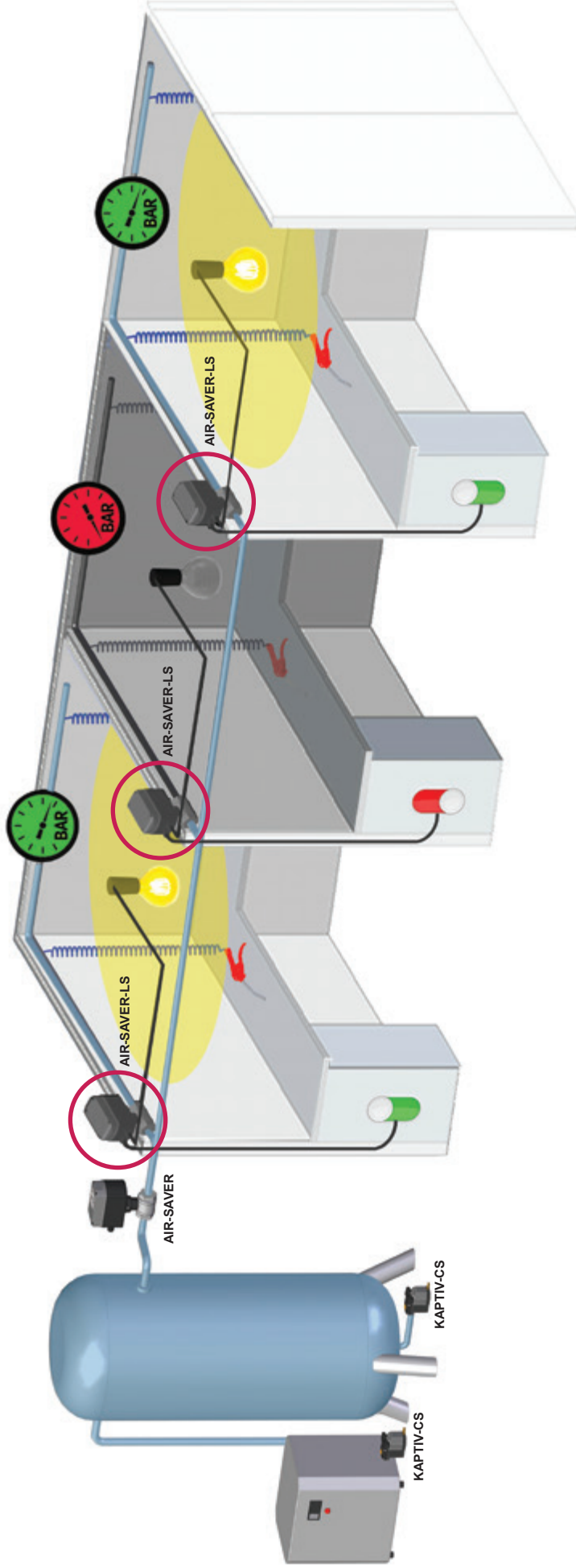
A typical installation example is to connect the AIR-SAVER-LS to a light switch. By switching on the lights in the production area, the AIR-SAVER-LS will subsequently open. The saved compressed air flows into the factory compressed air line and the compressor kicks in to produce the air needed to fill the system. At the end of the work-shift you switch off the light(s) and the AIR-SAVER-LS will close accordingly.

In addition, the AIR-SAVER-LS can be used to section off certain compressed air pipelines if not required.

INSTALLATION MANUAL

Detailed instruction manuals will guide you through the simple installation procedure. Our instruction manuals are designed with many illustrations and simple text. In addition, the JORC instruction manuals are set up in various languages.





Use the **AIR-SAVER-LS** to manage compressed air in general or sectionally.

Install an **AIR-SAVER** to completely shut off the air-supply to the factory during closing hours or holidays.

Chapter 9

LOCATOR

Ultrasonic air leak detector

The LOCATOR is an ultrasonic air leak detector that detects compressed air leaks, covering a wide frequency spectrum of 20-100 kHz.

PRODUCT FEATURES

The LOCATOR is an ultrasonic compressed air leak detector that detects leakages in compressed air systems at a distance up to approximately 12 mtrs.

The ultrasonic technology allows for easy and fast detection of leakages. Production activity may continue whilst using the LOCATOR. The headset and the LED display allow for audible and visual confirmation of all compressed air leakages.



The decibel meter can be adjusted to pin-point the exact location of a specific air leak.

The LOCATOR makes locating air leaks simple and cost effective.

A deluxe version of the LOCATOR with **hard hat earphones** with over 23 dB of noise attenuation is also available as **LOCATOR-Delux**.

COMMERCIAL BENEFITS

- Easy and effective detection of compressed air leaks in a wide frequency spectrum of 20-100 kHz.
- Locates repair points in air lines, offering energy & money saving options
- Locates air leaks during working hours, no need to shut down production to carry out the leak audit
- Cost competitive, offering a rapid pay-back
- Light and easy to operate, no training required

TECHNICAL ADVANTAGES

- Leaks will be detected from a distance up to approximately 12 mtrs.
- Includes sensitivity selection knob/noise reduction filter up to 70 dB
- Standard supplied in a protective case, complete with a headset
- The LOCATOR-Delux is supplied with hard hat earphones
- Fully automatic – no maintenance

PRODUCT DIMENSIONS



PRODUCT SPECIFICATIONS

Construction	Hand held ABS housing (pistol type) Stainless steel sensor enclosure
Circuitry	SMT/Solid state hybrid heterodyne receiver
Response time	300 milliseconds
Frequency response	20 - 100 kHz. (Centred at 28-42 kHz.)
Indicator	10 segment visual leak indication LED bar
Sensitivity selection	8 sensitivity positions/noise reduction filter up to 70 dB
Power	9 volt alkaline battery (included)
Low battery indicator	LED
Headset	Included; comfortable, easy adjustable headset Optionally available; noise reducing hard hat earphones
Ambient operating temp.	1 – 50 °C
Relative humidity	10 – 95%
Weight	0,3 kg.



Supplied in a protective case, complete with headset and rubber focussing probes



Visual leak & low battery indication and sensitivity selection knob



LOCATOR-Delux version with noise reducing hard hat earphones available

Chapter 10

LOCATOR-EV

Ultrasonic air leak detector

The LOCATOR-EV is an ultrasonic air leak detector that detects compressed air leaks in a frequency spectrum of 36 - 44 kHz.

PRODUCT FEATURES

The LOCATOR-EV is lightweight and easy to operate. The reliable and accurate detection capacity makes it a highly efficient air leak detector.

Air leak turbulence or friction produce high frequency ultrasonic waves and are normally higher than 20 kHz. This is typically above the range of human hearing levels.

The ultrasonic waves can travel in air and are highly directional. This directional aspect allows the LOCATOR-EV to isolate the ultrasonic sound amongst other external factory sounds, which will prove very useful in preventive maintenance, trouble shooting, quality control and diagnostic data collection on any compressed air system.



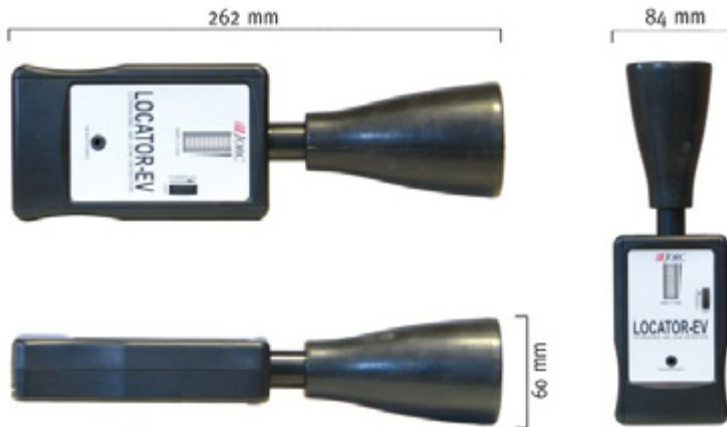
COMMERCIAL BENEFITS

- Easy and effective detection of compressed air leaks within a frequency spectrum of 36-44 kHz.
- Locates repair points in air lines, offering energy & money saving options
- Production does not need to be disturbed when the LOCATOR-EV is being applied
- Cost competitive, offering a rapid pay-back
- Light and easy to operate, no training required

TECHNICAL ADVANTAGES

- Leaks will be detected from a distance up to approximately 10 mtrs.
- Includes sensitivity selection knob
- Supplied in hard protective case, complete with a headset and rubber focussing probe
- Fully automatic – no maintenance

PRODUCT DIMENSIONS



PRODUCT SPECIFICATIONS

Construction	Hand held ABS housing Plastic sensor enclosure
Circuitry	SMT/Solid state hybrid heterodyne receiver, ultrasonic processor
Response time	300 milliseconds
Frequency response	36 – 44 kHz.
Indicator	10 segment visual leak indication LED bar
Sensitivity selection	Adjustable volume/sensitivity turn-knob
Power	9 volt alkaline battery (included)
Headset	Included; comfortable, easy adjustable headset
Ambient operating temperature	1 – 60 °C
Relative humidity	10 – 95%
Weight	0,3 kg.



Supplied in hard case with headset



Visual and audible leak indication



Comfortable, easy adjustable headset included

Notes:

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COMPRESSED AIR CONDENSATE MANAGEMENT AND ENERGY SAVING PRODUCTS

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