

# FlexSonic™ Acoustic Detector AC100 Sensor ATX10 Transmitter



## DESCRIPTION

The FlexSonic™ Acoustic Detector is designed to recognize the unique ultrasonic frequency content of events such as gas leaks. When a pressurized gas leak occurs, the frequency content of the sound being generated extends beyond the audible portion of the spectrum into the ultrasonic region (above 20 kHz). The intensity of the sound generated by a leak is determined by several factors including pressure, leak rate, gas viscosity, and distance from the leak source. Acoustic detection is less susceptible to environmental factors (such as high winds) that can degrade the ability of traditional sensing technology based on gas concentration to detect the presence of a leak. When combined with line of sight and/or point gas detectors, the additional layer of protection provided by the FlexSonic Acoustic Detector offers the ultimate solution for gas leak detection.

The FlexSonic Acoustic Detector is comprised of two main components: the AC100 Acoustic Sensor, and the ATX10 Acoustic Transmitter.

The AC100 Acoustic Sensor employs a high performance microphone and digital signal processing (DSP) technology to continuously monitor the acoustic signal. The wide dynamic range and spectral resolution enable the sensor to provide both superior sensitivity and false alarm discrimination.

The ATX10 Transmitter evaluates the incoming acoustic power spectrum data from the AC100 Acoustic Sensor and makes a determination of alarm condition.

## FEATURES AND BENEFITS

- ▲ Analyzes 24 discrete ultrasonic bands
- ▲ Large detection coverage area
- ▲ Nearly instantaneous response
- ▲ Non-contact gas leak detection
- ▲ Adjustable detection range
- ▲ Superior false alarm discrimination with patented technology
- ▲ Suitable for harsh outdoor applications
- ▲ Stand alone capability with the ATX10 Transmitter
- ▲ Globally approved explosion-proof stainless steel housing
- ▲ Wide acoustic dynamic range
- ▲ Integrated Acoustic Integrity Check (AIC)
- ▲ 4-20 mA output combined with HART
- ▲ Can detect small gas leaks at or below 6 bar (87 psi)
- ▲ Extensive data logging with removable storage
- ▲ Ideally suited for locations where traditional technologies are challenged, such as outdoor and unmanned operations
- ▲ Minimum maintenance required
- ▲ No routine calibration required
- ▲ Not affected by poisoning
- ▲ Functions with all gas types
- ▲ Fail-safe operation
- ▲ Certified SIL 2 Capable



# SPECIFICATIONS

## ATX10 AND AC100

<b>Operating Voltage</b>	24 Vdc nominal; Operating range is 9 to 30 Vdc. Um=250 V (Intrinsic Safety Rating).
<b>Power Consumption</b>	AC100: 1.25 watts @ 9 Vdc 1.25 watts @ 24 Vdc 1.25 watts @ 30 Vdc.  ATX10: 0.75 watts @ 9 Vdc 1.25 watts @ 24 Vdc 1.75 watts @ 30 Vdc
<b>Temperature Range</b>	Operating: -55°C to +75°C (-67°F to +167°F) Storage: -55°C to +85°C (-67°F to +185°F).
<b>Humidity</b>	5 to 95% RH, non-condensing (Det-Tronics verified).
<b>Ingress Protection</b>	IP66, NEMA/Type 4X.
<b>Electro-Magnetic Compatibility</b>	EMC Directive 2004/108/EC
<b>Conduit Entries</b>	3/4" NPT or M25.
<b>Enclosure Material</b>	316 stainless steel, electropolished.
<b>Shipping Weight</b>	AC100: 6.2 pounds (2.8 kilograms). ATX10: 11.5 pounds (5.2 kilograms).
<b>Warranty</b>	3 years.
<b>AC100 only</b>	
<b>Detection Coverage Performance</b>	Leak Source = 0.004 kg/Sec (6 Bar (87 psi), 2 mm round orifice).  Basic Mode, 50 db setting = 12 meters (40 feet) Profile Mode (4 db above background) = 20 meters (66 feet)
<b>Acoustic</b>	Dynamic range: Greater than 100 db
<b>Self-Diagnostic Test (AIC)</b>	Automatic acoustic integrity check performed once every 10 (factory default) minutes.
<b>ATX10 only</b>	
<b>Current Output</b>	4-20 mA with HART (non-isolated, sourcing*) 20 mA indicates Alarm condition 16 mA indicates Pre-Alarm condition 4 mA indicates Normal condition 2 mA or less indicates a Fault condition. * Isolated or sinking operation requires the use of a FlexVu® Model UD10 Display.
<b>Maximum Loop Resistance</b>	300 ohms at 18 Vdc; 600 ohms at 24 Vdc
<b>Wiring Terminals</b>	Rated for 14 to 18 AWG (2.5 to 0.75 mm <sup>2</sup> ) wire.

## CERTIFICATION—

### FM/CSA



### AC100

Class I, Div1, Groups B, C & D  
Class II/III, Div1/Div2, Groups E, F & G  
Class I, Div2, Groups A, B, C & D  
Temperature code T4  
Tamb: -55°C to +75°C  
NEMA/Type 4X

### ATX10

Class I, Div1, Groups B, C & D  
Class II/III, Div1/Div2, Groups E, F & G  
Temperature code T5  
Class I, Div2, Groups A, B, C & D  
Temperature code T4  
Tamb: -55°C to +75°C  
NEMA/Type 4X

### ATEX



### AC100

DEMKO 12 ATEX 1263479X  
CE 0539 Ex II 2 G II 2 D  
Ex d ib IIC T4 Gb  
Ex tb IIIC T80°C Db  
Tamb: -55°C to +75°C  
IP66

### ATX10

DEMKO 12 ATEX 1263925X  
CE 0539 Ex II 2 G II 2 D  
Ex d IIC T6 Gb  
Ex tb IIIC T80°C Db  
Tamb: -55°C to +75°C  
IP66

### IECEX



### AC100

IECEX ULD13.0002X  
Ex d ib T4 Gb  
Ex tb IIIC T80°C Db  
Tamb: -55°C to +75°C  
IP66

### ATX10

IECEX ULD13.0003X  
Ex d IIC T6 Gb  
Ex tb IIIC T80°C Db  
Tamb: -55°C to +75°C  
IP66

### DNV



Type Approval Certificate No. A-11023.

### SIL Approval



IEC 61508  
Certified SIL 2 Capable.

Specifications subject to change without notice.

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