

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

Operating Voltage	24 Vdc nominal; Operating range is 9 to 30 Vdc. Um=250 V (Intrinsic Safety Rating).
Power Consumption	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
Temperature Range	Operating: -55°C to +75°C (-67°F to +167°F) Storage: -55°C to +85°C (-67°F to +185°F).
Humidity	5 to 95% RH, non-condensing (Det-Tronics verified).
Ingress Protection	IP66, NEMA/Type 4X.
Electro-Magnetic Compatibility	EMC Directive 2004/108/EC
Conduit Entries	3/4" NPT or M25.
Enclosure Material	316 stainless steel, electropolished.
Shipping Weight	AC100: 6.2 pounds (2.8 kilograms). ATX10: 11.5 pounds (5.2 kilograms).
Warranty	3 years.
AC100 only	
Detection Coverage Performance	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)
Acoustic	Dynamic range: Greater than 100 db
Self-Diagnostic Test (AIC)	Automatic acoustic integrity check performed once every 10 (factory default) minutes.
ATX10 only	
Current Output	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.
Maximum Loop Resistance	300 ohms at 18 Vdc; 600 ohms at 24 Vdc
Wiring Terminals	Rated for 14 to 18 AWG (2.5 to 0.75 mm ²) 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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