

# **Ultrasonic Air Transducer**

Technical Data Sheet

Airmar ultrasonic transducers deliver the highest level of performance in the most challenging environments and they are the key component for our customers success and their applications. Our precision tuned air-ranging transducers are tried and true performers, even when used for difficult tasks. American-made from the highest quality materials, Airmar's ultrasonic transducers provide reliable, long-lasting excellence to any measurement system.

# **ATK200**



#### **SPECIFICATIONS**

Best Operating Frequency: 200 kHz, ±4%

25 mm

Minimum Transmit Sensitivity at Best Transmit Frequency:

 $102 dB re 1\mu Pa/V at 1 m$ 

Minimum Receive Sensitivity at Best Receive Freq.: -180 dB re 1V/µPa

Minimum Parallel Resistance: 300  $\Omega$ ,  $\pm 30\%$ 

Minimum and Maximum Sensing Range\*: 10 cm to 3 m

Typical Sensing Range: 12 cm to 2 m Free (1 kHz) Capacitance: 500 pF, ±20% pF Beamwidth (@ -3 dB Full Angle): 10°, ±2°

Maximum Driving Voltage (2% Duty Cycle Tone Burst): 500 V

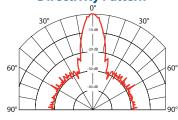
Operating Temperature: -40°C to 60°C

Weight: 6 g

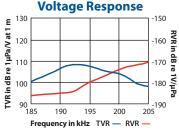
Housing Material: Kynar® 720 Acoustic Window: Kynar® 720

\*Pulse-Echo Mode: Minimum and maximum ranges are best case scenarios. Actual range may vary, depending on drive circuitry and signal processing. Note: Optimally, performance measurements should be taken when the transducer reaches a steady state.

#### **Directivity Pattern**



## **Transmit & Receive Voltage Response**



## **Magnitude & Phase** 100k 1k 100 -90 205

195

Frequency in kHz Magnitude —

200

Phase

**Impedance** 

**Figure of Merit** (Sum of TVR & RVR) -20 -40 -60 -80 -100 <del>-</del> 185 195 200 205 Frequency in kHz

### 200 kHz

### AIRDUCER® Ultrasonic Transducer

### **Applications**

- Level measurement in chemically aggressive environments
- Automation control
- Food and beverage processing
- Proximity sensing
- · Obstacle avoidance
- Flow monitoring

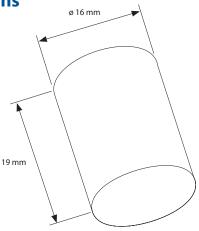
#### **Features**

- Rugged one-piece PVDF housing is U.S. FDA compliant
- · Cylindrical design allows for installation in various applications

### **Options**

Available in alternate housing (AT200)

#### **Dimensions**



#### **Additional Resources**

Theory of Operations



Applying Ultrasonic Technology



Т1 Developer **Board** 



Airmar's T1 Developer's Transceiver Module can be used for evaluation of AIRDUCER® Transducers.





