

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.

## AR50CH



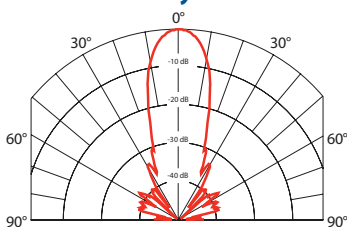
### SPECIFICATIONS

**Best Operating Frequency:** 50 kHz,  $\pm 4\%$   
**Minimum Transmit Sensitivity at Best Transmit Frequency:**  
 106 dB re  $1\mu\text{Pa/V}$  at 1 m  
**Minimum Receive Sensitivity at Best Receive Freq.:** -162 dB re  $1\text{V}/\mu\text{Pa}$   
**Minimum Parallel Resistance:** 450  $\Omega$ ,  $\pm 30\%$   
**Minimum and Maximum Sensing Range\*:** 25 cm to 15 m  
**Typical Sensing Range:** 30 cm to 10 m  
**Free (1 kHz) Capacitance:** 5,700 pF,  $\pm 20\%$  pF  
**Beamwidth (@ -3 dB Full Angle):**  $12^\circ$ ,  $\pm 2^\circ$   
**Maximum Driving Voltage (2% Duty Cycle Tone Burst):** 1,500 V<sub>pp</sub>  
**Operating Temperature:** -40°C to 90°C  
**Weight:** 160 g  
**Housing Material:** Glass filled polyester  
**Acoustic Window:** Glass reinforced epoxy

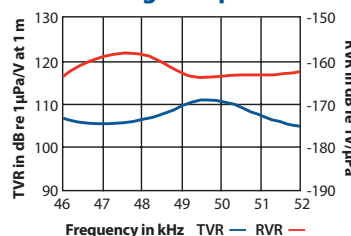
\*Pulse-Echo Mode: Minimum and maximum ranges are best case scenarios. Actual range may vary, depending on drive circuitry and signal processing.

**Note:** Optimally, performance measurements should be taken when the transducer reaches a steady state.

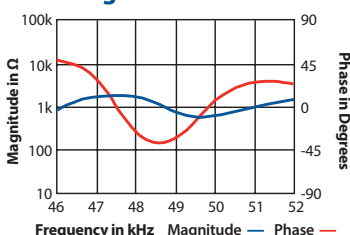
### Directivity Pattern



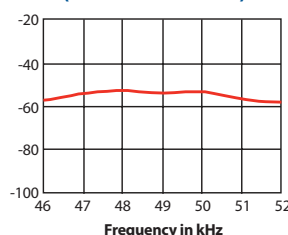
### Transmit & Receive Voltage Response



### Impedance Magnitude & Phase



### Figure of Merit (Sum of TVR & RVR)



## 50 kHz

## AIRDUCER® Ultrasonic Transducer

### Applications

- Level measurement
- Open channel flow
- Obstacle avoidance
- Proximity
- Robotics

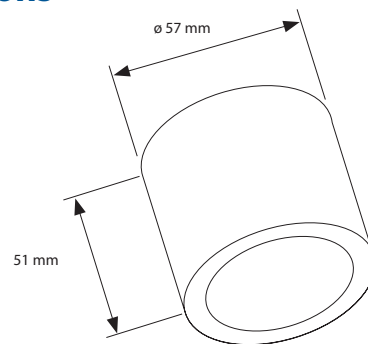
### Features

- Improved deadband performance as compared to AT50
- Rugged sealed construction
- Cylindrical design allows for installation in various applications

### Options

- 10 K $\Omega$  thermistor available for temperature compensation
- Available in alternate housing material (ATK50)

### Dimensions



### Additional Resources

Theory of Operations



Applying Ultrasonic Technology



T1 Developer Board



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