

Ultrasonic Transducers for Level and Flow



Sensor technology for your environment.

























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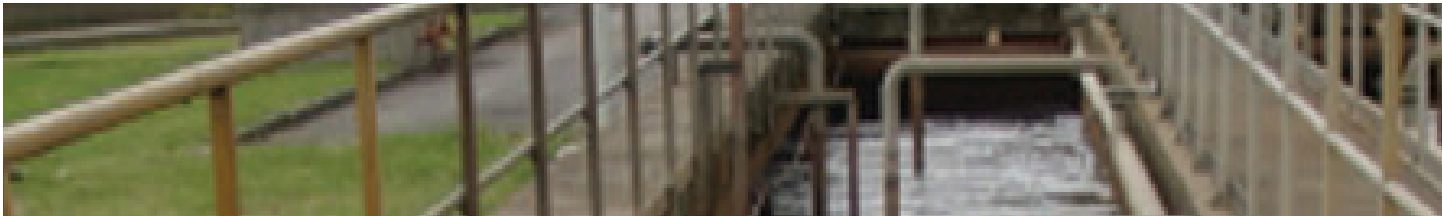
 **AIMMAR**[®]
TECHNOLOGY CORPORATION



Ultrasonic Air Ranging Transducers

AIRMAR's precision tuned ultrasonic transducers provide non-contact solutions for your toughest sensing problems. Safe, rugged and reliable, our transducers function extremely well in harsh environments. Airducers® are rated IP68 and have no movable parts to break down. Typical applications include level and flow measurement and control.

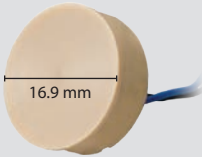
Model	Frequency	Diameter	Typical Range	Beamwidth
ART15 	15 kHz	ø 169 mm	1 m to 60 m	6°
AR20 	19.5 kHz	ø 205 mm	80 cm to 40 m	7°
AR30 	30 kHz	ø 106 mm	80 cm to 25 m	12°
ARK30 	30 kHz	ø 106 mm	80 cm to 25 m	12°
PVDF housing for chemically aggressive environments				
AR41 	41 kHz	ø 92.2 mm	35 cm to 15 m	14°
ARK41 	41 kHz	ø 92.2 mm	35 cm to 15 m	14°
PVDF housing for chemically aggressive environments				
AR50 	50 kHz	ø 92.2 mm	30 cm to 10 m	12°
AR50CH 	50 kHz	ø 57 mm	30 cm to 10 m	12°
ARK50-THD 	50 kHz	ø 51 mm 2" pipe thread	35 cm to 10 m	10°
PVDF housing for chemically aggressive environments				
AT50 	50 kHz	ø 57 mm	35 cm to 10 m	12°
ATK50 	50 kHz	ø 57 mm	35 cm to 10 m	10°
PVDF housing for chemically aggressive environments				
Model	Frequency	Diameter	Typical Range	Beamwidth
ARK50 	50 kHz	ø 92.2 mm	35 cm to 10 m	10°
PVDF housing for chemically aggressive environments				
ARK75-THD 	75 kHz	ø 40.6 mm 1.5" pipe thread	25 cm to 7 m	14°
PVDF housing for chemically aggressive environments				
AT75 	75 kHz	ø 38 mm	25 cm to 7 m	15°
ATK75 	75 kHz	ø 38 mm	25 cm to 7 m	14°
PVDF housing for chemically aggressive environments				
AT120 	125 kHz	ø 25 mm	20 cm to 3 m	12°
ATK120 	125 kHz	ø 25 mm	20 cm to 3 m	10°
PVDF housing for chemically aggressive environments				
ARK120-THD 	125 kHz	ø 40.6 mm 1.5" pipe thread	20 cm to 3 m	12°
PVDF housing for chemically aggressive environments				
AT200 	200 kHz	ø 16 mm	12 cm to 2 m	12°
ATK200 	200 kHz	ø 16 mm	12 cm to 2 m	10°
PVDF housing for chemically aggressive environments				
AT225 	228 kHz	ø 13 mm	10 cm to 1.5 m	15°
AT300 	300 kHz	ø 12 mm	5 cm to 50 cm	10°

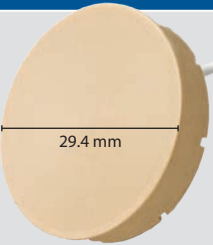


Pipe Flow Products

1 MHz Transducers for Flow Measurement in Pipes

AIRMAR's new, low profile ultrasonic transducer features a robust PEEK housing suitable for in-pipe flow monitoring systems. OEM's have their choice of M16, M28 or un-threaded housings.

SPECIFICATIONS M16	
Nominal Operating Frequency: 1 MHz	
Nominal TVR: 165 dB	
Nominal RVR: -200 dB	
Q: 5	
Minimum Parallel Resistance: 235Ω	
Free (1kHz) Capacitance: 800pF	
Nominal Beam Width (@-3 dB Full Angle): 8°	
Max Driving Voltage (2% Duty Cycle Tone Burst): 250V _{pp}	
Operating Temperature: -20°C to 60°C	
Dimensions: 16.9 mm diameter	
Weight: 3 g	
Housing Material: PEEK	




SPECIFICATIONS M28	
Nominal Operating Frequency: 1 MHz	
Nominal TVR: 176 dB	
Nominal RVR: -203 dB	
Q: 4	
Minimum Parallel Resistance: 35Ω	
Free (1kHz) Capacitance: 3500pF	
Nominal Beam Width (@-3 dB Full Angle): 4°	
Max Driving Voltage (2% Duty Cycle Tone Burst): 200V _{pp}	
Operating Temperature: -20°C to 60°C	
Dimensions: 29.4 mm diameter	
Weight: 10 g	
Housing Material: PEEK	



Open Channel Flow

Tune-In with Broadband Technology for Flow Measurement Applications

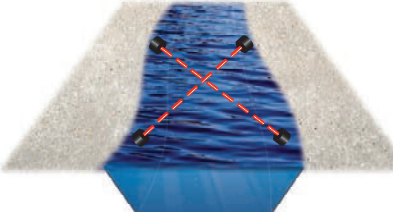
AIRMAR's broadband transducers achieve superior results by using a new technology that allows our transducers to operate over a wide range of frequencies without sacrificing acoustic sensitivity. This enables designers to use frequency modulated (FM); a.k.a CHIRP, and coded transmissions. Outstanding resolution can be obtained using pulse compression techniques.

Model	Frequency	Diameter	Pulsed Power	Beamwidth
SS538 	80-130 kHz 130-210 kHz 160-260 kHz	ø 108 mm	2 kW	13° to 8° 8° to 4° 5° to 4°
M194 	160-260 kHz	ø 110 mm	500 W	8° to 10°
SS510 	160-260 kHz (Surface temp. and XID also available)	ø 70 mm	500 W	8° to 10°

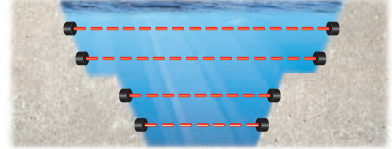
Typical Configurations for Open Channel Flow Measurement



Single-Path System / Time of Flight
 One transducer is placed upstream and one is placed downstream. Flow velocity is determined by comparing the measured velocity with the velocity of sound through the media.



Cross-Path System
 Recommended when the flow is not ideal. For increased accuracy in nonuniform situations.



Multiple Level System
 Multiple transducers perform better under variable and/or non-ideal velocity profile distribution situations caused by upstream and downstream flow disturbances.



www.airmar.com

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As Airmar constantly improves its products, all specifications are subject to change without notice. All specifications typical at 22°C (72°F). Pulse-Echo Mode. Minimum and maximum ranges are best case scenarios. Actual range may vary, depending on drive circuitry and signal processing. Factory Mutual approved models suitable for: Class I, Division 1, Hazardous Locations. AIRDUCER® is a registered trademark of Airmar Technology Corporation. AMPHENOL is a registered trademark of Amphenol Corporation. Other company or product names mentioned in this document may be trademarks or registered trademarks of their respective companies, which are not affiliated with Airmar.

