

Ultrasonic Transducers for Level and Flow



Sensor technology for your environment.



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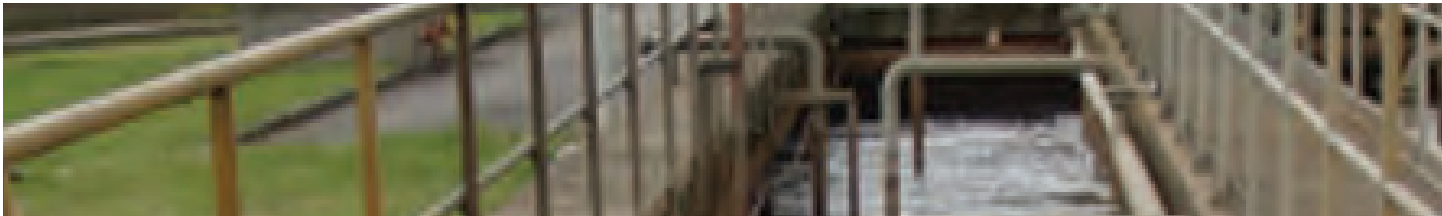


Ultrasonic Air Ranging Transducers

AIRMAR's 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
AR20  	20 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 PVDF housing for chemically aggressive environments	80 cm to 25 m	12°
AR41  	41 kHz	ø 92.2 mm	35 cm to 15 m	14°
ARK41  	41 kHz	ø 92.2 mm PVDF housing for chemically aggressive environments	35 cm to 15 m	14°
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 PVDF housing for chemically aggressive environments	35 cm to 10 m	10°
AT50  	50 kHz	ø 57 mm	35 cm to 10 m	12°
ATK50  	50 kHz	ø 57 mm PVDF housing for chemically aggressive environments	35 cm to 10 m	10°
ARK50  	50 kHz	ø 92.2 mm PVDF housing for chemically aggressive environments	35 cm to 10 m	10°

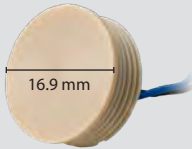
Model	Frequency	Diameter	Typical Range	Beamwidth
ARK75-THD  	75 kHz	ø 40.6 mm 1.5" pipe thread PVDF housing for chemically aggressive environments	25 cm to 7 m	14°
AT75  	75 kHz	ø 38 mm	25 cm to 7 m	15°
ATK75  	75 kHz	ø 38 mm PVDF housing for chemically aggressive environments	25 cm to 7 m	14°
AT120  	120 kHz	ø 25 mm	20 cm to 3 m	12°
ATK120  	120 kHz	ø 25 mm PVDF housing for chemically aggressive environments	20 cm to 3 m	10°
ARK120-THD  	120 kHz	ø 40.6 mm 1.5" pipe thread PVDF housing for chemically aggressive environments	20 cm to 3 m	12°
AT200  	200 kHz	ø 16 mm	12 cm to 2 m	12°
ATK200  	200 kHz	ø 16 mm PVDF housing for chemically aggressive environments	12 cm to 2 m	10°
AT225  	225 kHz	ø 13 mm	10 cm to 1.5 m	15°
AT300  	300 kHz	ø 12 mm	5 cm to 50 cm	10°

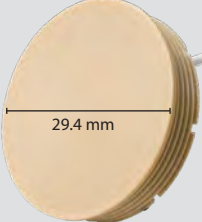


Pipe Flow Products

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.

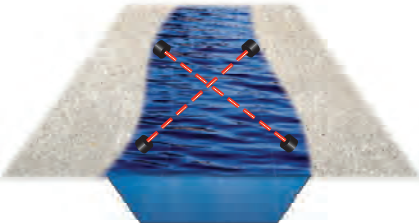
Model	Frequency	Diameter	Pulsed Power	Beamwidth
SS538 	80-130 kHz 130-210 kHz 160-260 kHz	ø 108 mm	2 kW	13° to 8° 8° to 4° 5° to 4°
M194 	160-260 kHz	ø 110 mm	500 W	8° to 10°
SS510 	160-260 kHz (Surface temp. and XID also available)	ø 70 mm	500 W	8° to 10°

Typical Configurations for Open Channel Flow Measurement



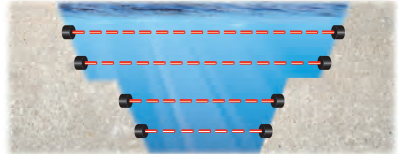
Single-Path System / Time of Flight

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.



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