AUDIOWELL
SENSOR TECHNOLOGY

www.audiowell.com

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AUDIOWELL

AUTOMOTIVE

APPLICATIONS & SOLUTIONS

PRODUCT CATALOGUE

COMPANY INTRODUCTION

Established in 1999, Audiowell Electronics (Guangdong) Co., Ltd. (NEEQ: 832491) is a leading provider of position, distance and speed sensor components and sensing solutions with focus on the research, design, production and sales of sensitive components, sensors and corresponding modular solutions.

As a sensor manufacturer and solution provider, Audiowell has the most comprehensive sensor component product line in China. Our ultrasonic sensors, flow sensors, electro-acoustic devices and ultrasonic transducer devices are market leaders and widely used in a variety of industries and fields including automotive electronics, instruments and meters, intelligent security systems and health appliances. While serving Chinese customers, we have also provided professional products and services for the global customers in many countries and regions.

Adhering to the business philosophy of “Be good, do better, create the best future”, we are committed to becoming a global major supplier of sensors (position, distance, speed) and will continuously concentrate on cutting edge technologies as well as advanced manufacturing techniques, to provide innovative and superior products for our society and create a safe, convenient and comfortable life for everyone.

Our Strength

- Ultrasonic technology leads domestic market and stays in front in the international market.
- A number of intellectual properties and over 200 patents.
- Two industrial parks covering over 65,000 square meters.
- Over 15 years of experience cooperating with Fortune 500 companies.

AUDIOWELL

SENSOR TECHNOLOGY

Sensor technology shapes an intelligent life

AUTOMOTIVE APPLICATIONS
&SOLUTIONS

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APA Ultrasonic Sensor

The APA ultrasonic sensor is the key component of the automatic parking assist system. It uses ultrasound to measure the distance to obstacles near the vehicle, from which the size of the parking space and the vehicle's position can be calculated. It operates at a different frequency from the reverse parking sensor to avoid interference.

Features

- Long detection range, up to 5000mm
- Excellent directivity
- No interference with reverse parking sensors

Applications

- Automatic parking system

Model	T/R48-15.5H279Z
Resonant frequency	48±1.0 kHz
Overall sensitivity	550~850μS
Decay time	1.2~1.8mS at 25±3℃ ≤2.2mS at -40~+85℃
X-axle direction angle	80°
Y-axle direction angle	80°
Capacitance	1400±20% pF
Max. input voltage	160 Vp-p
Operating temperature	-40℃~+85℃

UPA Ultrasonic Sensor

UPA ultrasonic sensor is the core component of Parking System. It uses ultrasound to measure the distance between the vehicle and the front and rear obstructions.

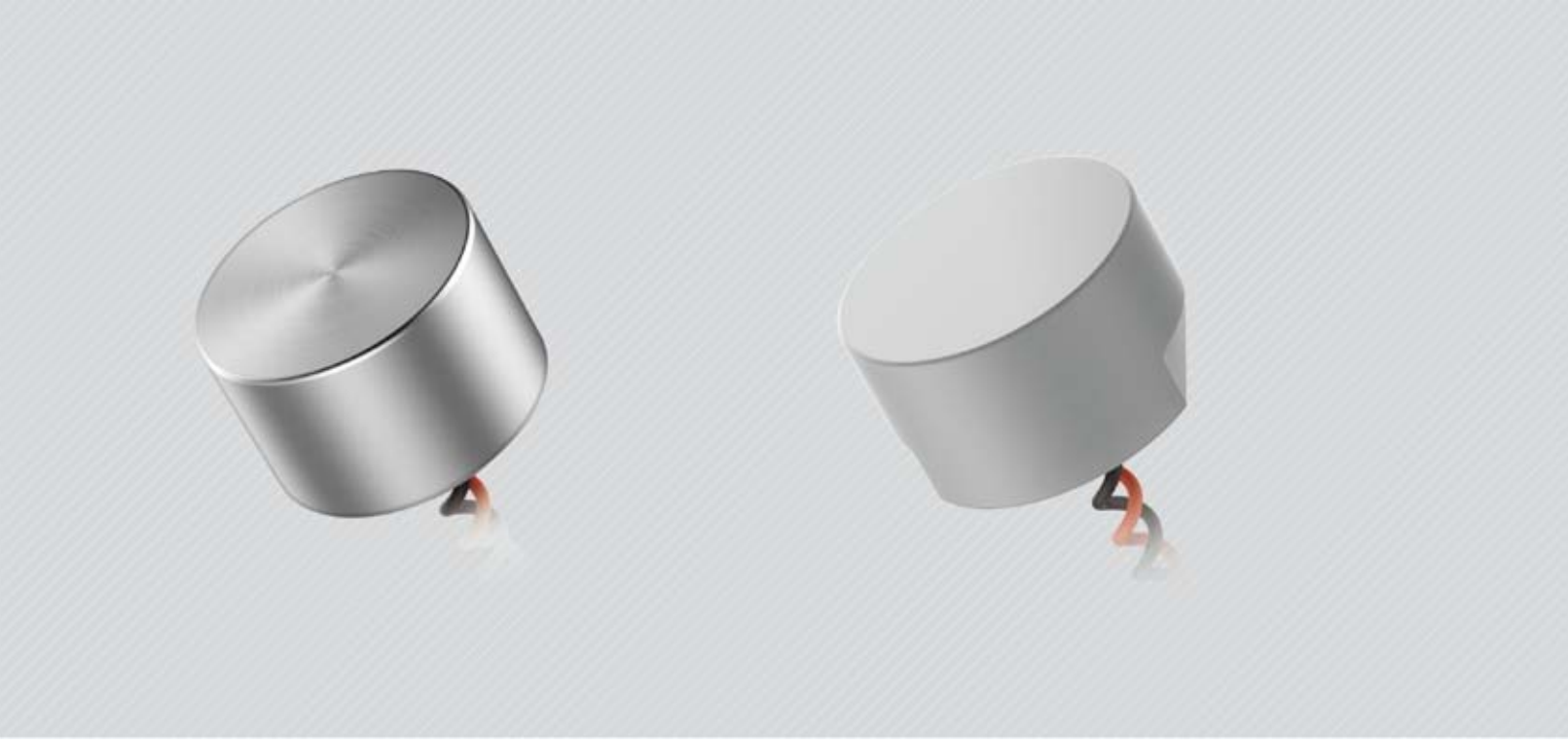
Features

- Measuring range 150mm-2500mm
- Low power consumption
- High reliability
- Excellent waterproof performance and weatherability

Applications

- Parking assist system
- Blind zone detection

Model	T/R55.5-15.5E279Z-L19-01	T/R58-14K279Z-L12-02
Resonant frequency	55.5±2.0 KHz	58±1.0KHz
Overall sensitivity	480~1000μS	3.0 ±1.0 Vp-p
Decay time	≤2.20 mS	≤1.80 mS
X-axle direction angle	90±15°	90±15°
Y-axle direction angle	45±10°	45±10°
Capacitance	1300±20%pF	2000±15% pF
Max. input voltage	160 Vp-p	140 Vp-p



Assembled Parking Sensor

The assembled parking sensor is an assembled ultrasonic sensor module, which consists of sensor, silicone ring, plastic housing and cable. It can be connected directly with the signal processing module, and is the key component of a parking system.

Model	12U73-TK045L201-01	14.4A279-TK017L201-01
Resonant frequency	40±1.0KHz	40±1.0KHz
Overall sensitivity	⩾200mV	⩾600mV
Decay time	⩽1.2ms	⩽1.2ms
Capacitance	2000±15%pF	2000±15%pF
Max. input voltage	140Vp-p	140Vp-p

Features

- High sensitivity, low power consumption and strong anti-interference ability
- Adaptable to a diversity of ECUs and car models
- Excellent waterproof performance and weatherability, suitable for humid and dusty environments

Applications

- Parking assist system

Digital Ultrasonic Sensor

The Digital Ultrasonic Sensor uses the ultrasonic time-of-flight principle to accurately measure the distance between the sensor and the obstacle. The sensor outputs digital distance signal and self-test information with various communication protocols such as LIN bus and 2/3-wire IO, which makes it suitable for a variety of intelligent parking systems.

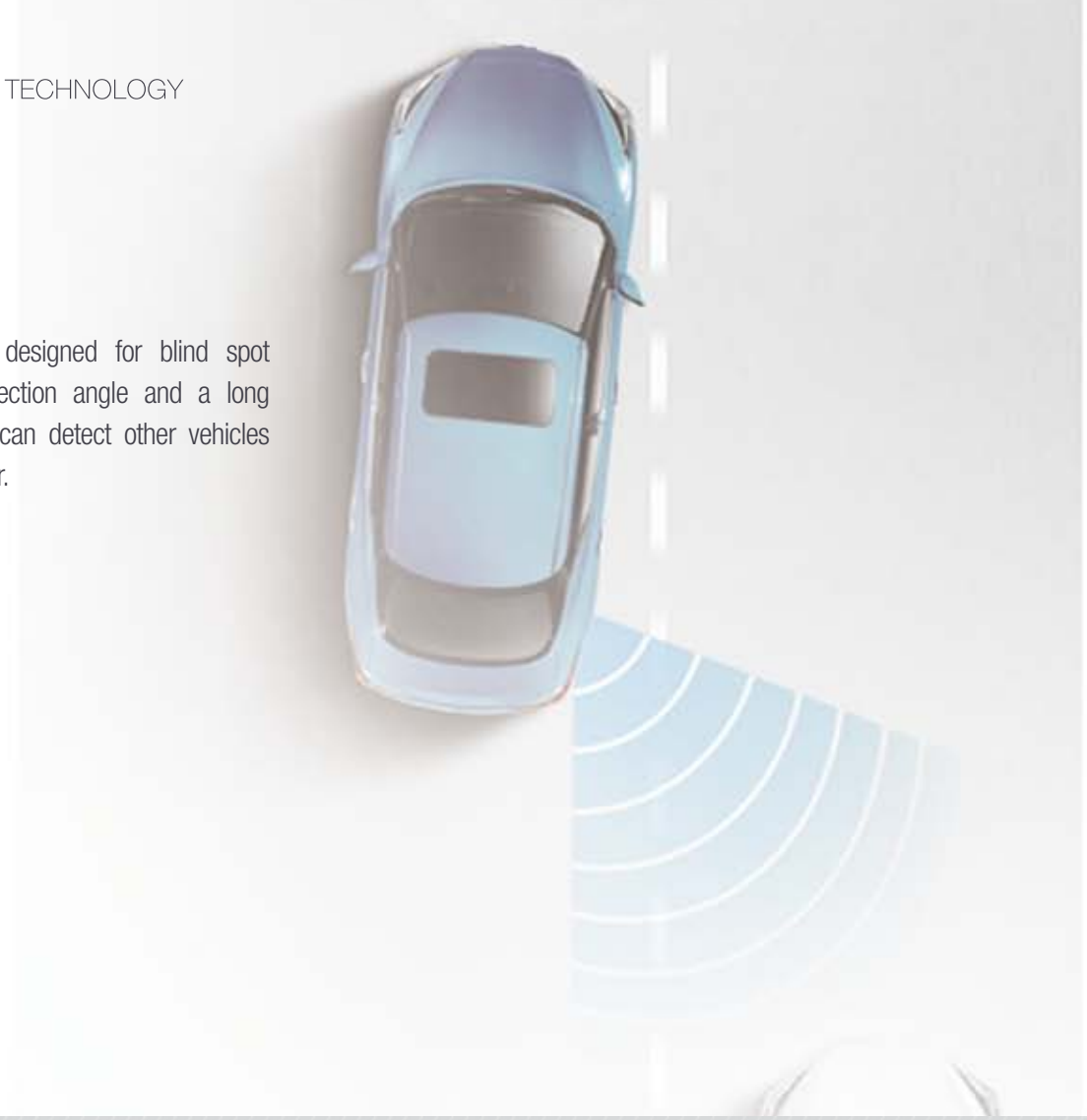
Features

- Digital signal output
- High accuracy and reliability
- Built-in circuit which matches the self-developed transducer

Applications

- Intelligent parking systems
- Blind spot detection systems
- Obstacle avoidance systems

Model	VU0001/ VU0005	VU0002/ VU0004
Type	APA	UPA
Frequency	48±1.0 KHz	55.5±1.0 KHz
Dierction Angle	X: 60° Y: 60°	X: 90° Y: 45°
Dierction Range	300~5000 mm	250~2500 mm
Accuracy	⩽ ±50 mm	⩽ ±50 mm
Input Voltage	12V (9～16V)	12V (9～16V)
Communication Protocol	LIN / IO	LIN / IO



Ultrasonic BSD Sensor

The Ultrasonic BSD Sensor is designed for blind spot detection. Featuring a wide detection angle and a long measuring distance, this sensor can detect other vehicles located to the driver's side and rear.

Features

- Blind zone detection
- Wide detection angle
- 3.5M detection range
- High accuracy

Applications

- Blind Zone Monitoring Solution

Model	VU0008
Frequency	48±1.0 KHz
Dierction Angle	X: 120˚ Y: 60˚
Dierction Range	250~3500 mm
Accuracy	± 5cm
Input Voltage	12V (9~16V)
Communication Protocol	IO / LIN

Open-type Ultrasonic Sensor

ROA system (Rear passenger monitoring system) uses open type ultrasonic sensor to measure the moving object in the vehicle rear seat. The principle is TOF (Time of flight). When there is any moving object in the rear seat, such as human or pet, the driver will be reminded by the alarm.

Features

- Large detection range
- Good immunity to interference

Applications

- Rear passenger monitoring system (ROA system)
- Anti-theft alarm device

Model	TO0101-012 & TO0104-012
Center Frequency	40±1.0 KHz
Sound Pressure Level	117~122 dB
Sensitivity	-60~-55 dB
Beam Angle	90°
Static capacitance	1900±20% pF
Operating temperature	-40～+90℃

DEF/AdBlue Sensor

DEF/AdBlue Sensor is designed to measure the level of the urea solution (DEF / AdBlue) in the Selective Catalytic Reduction (SCR) system for diesel engines. Unlike the traditional reed level sensor in which the float sender can get stuck, this sensor uses ultrasonic wave to measure the liquid level and therefore contains no moving part. It has higher accuracy and reliability than typical reed sensors. This product can also be used as a diesel level sensor.

Features

- Continuous measurement
- High accuracy (four times as high as the traditional reed level sensor)
- No moving part

Applications

- Measuring the level of urea solution (DEF / AdBlue) or diesel tank

Model	UM0059-000
Measurement range	500mm (customizable)
Blind zone	40mm
Measurement accuracy	±5mm
Response time	⩽2s
Temperature detection range	-10 ˚C~+85 ˚C(No crystal or coagulation)
Output	Digital output
Operating temperature	-10 ˚C~+85 ˚C(No crystal or coagulation)
Power	DC 12V
Operating current	⩽25mA

Hall Speed Sensor

The Hall Speed Sensor detects the speed and direction of gear rotation based on hall effect. Measurement is accomplished without contacting the target gear. It measures the change of magnetic field induced by gear tooth and tooth gap with dual differential signals. The output signals are two-channel square waves with 90˚phase shift, and the direction of rotation is determined by their lead/lag phase shifting.

Features

- High reliability even in harsh environments
- Wide measurement range ensures high accuracy for high/low speed
- Digital output for easy programming

Applications

- Measuring the speed and direction of gear rotation

Model	HQ0059
Operating air gap	0.5~2 mm
Operating temperature	-40˚C~+150˚C
Supply voltage	4.5~24V
Output signal type	Two-channel square wave
Duty cycle	50%±10%
Phase shift	90%±15%
Frequency	20Hz~20 kHz
Ingress protection	IP65

Low Frequency Buzzer

The low frequency buzzer is a piezoelectric buzzer with frequency lower than 1KHz and no coil structure. It consumes only one third of the power of electromagnetic buzzers and fully complies with EMC standards.

Features

- Low resonant frequency
- High immunity to electromagnetic interference

Applications

- Parking system

Model	AW1S43HEP-080Z
Sound press level	82 dB Min.at 800Hz/10Vp-p Square Wave/50cm
Resonant frequency	800±30Hz
Operating voltage	DC 12V
Max. current consumption	70mA
Operating temperature	-40˚C ~ +85˚C

Piezoelectric Buzzer

The piezoelectric buzzer generates mechanical deformation of piezoelectric ceramic plates by reverse piezoelectric effect, which induces the vibration of vibrators and forms sound wave in the air. This one-piece electronic sound device is widely applied in automotive electronics, security alarming, etc.

Applications

- Paking alarm system
- Anti-theft alarm system

Model	AW4B42GEL105-32A5Z	AW1S30TEP036-20A0Z	AW1S30TEP080-20A0Z
Sound pressure	106dB min.	93dB min.	100dB min.
Operating voltage	12VDC	30Vp-p	30Vp-p
Resonant frequency	3.2±0.2KHz	2.0±0.3KHz	2.0±0.3KHz
Operating temperature	-40˚C~+80˚C	-30˚C ~ +85˚C	-40˚C~ +85˚C

140 + Countries

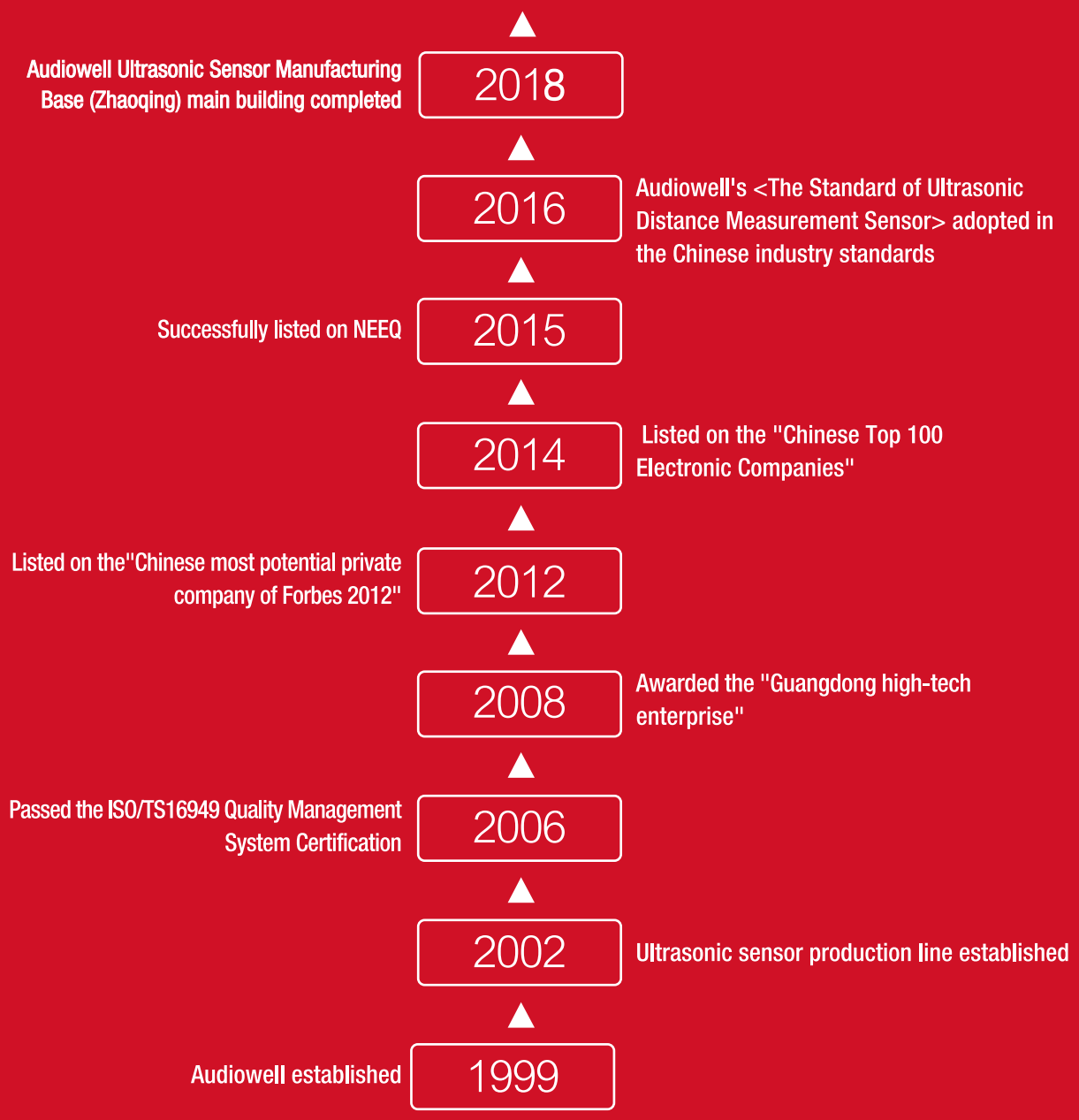
1500 + Customers

200 Million Users

SMART HOME
APPLICATIONS & SOLUTIONS

AUTOMOTIVE
APPLICATIONS & SOLUTIONS

SMART METERING
APPLICATIONS


2018
Audiowell Ultrasonic Sensor Manufacturing Base (Zhaoqing) main building completed
2016
Audiowell's <The Standard of Ultrasonic Distance Measurement Sensor> adopted in the Chinese industry standards
2015
Successfully listed on NEEQ
2014
Listed on the "Chinese Top 100 Electronic Companies"
2012
Listed on the"Chinese most potential private company of Forbes 2012"
2008
Awarded the "Guangdong high-tech enterprise"
2006
Passed the ISO/TS16949 Quality Management System Certification
2002
Ultrasonic sensor production line established
1999
Audiowell established

MILESTONES