AUTOMOTIVE ELECTRONICS

Ultrasonic Parking Transducer

Ultrasonic Assembled Sensor

Ultrasonic Parking Assist Sensor

AK2 Ultrasonic Sensor

Ultrasonic Transducer for CPD

Life Detection Module

Life Detection Module

Haptic Feedback Actuator

Ultrasonic AdBlue Quality Sensor

DEF/AdBlue Level Sensor

Forward Collision Warning Sensor

Door Hidden Ultrasonic Sensor

Ultrasonic Lens Cleaning

Automotive Fragrance Solution

CO₂ Sensor

Buzzer

AUTOMOTIVE ELECTRONICS

Ultrasonic Parking Transducer

Features

- Quality control standard of Automotive OEM manufacturers
- Outstanding consistency and stability
- High sensitivity and low power consumption

Applications

- Reverse parking system
- Parking assist system

Ultrasonic Assembled Sensor

Features

- Integrated design, easy to install
- High sensitivity

Applications

- Parking Distance Control(PDC)
- Reversing aid system

Model	TC0120-001	TC0121-002	TC0062-003	TC0223-000
Appearance				
Resonant frequency (KHz)	48	55.5	58	55.5
Direction angle (°)	X: 60 Y: 60	X: 90 Y: 45	X: 90 Y: 45	X: 90 Y: 45
Decay time (ms)	≤1.8	≤2.2	≤1.8	≤2.0
Size (mm)	Φ15.5 x H9.0	Φ15.5 x H9.0	Φ14.0 x H9.0	Φ15.5 x H9.0

Model	TK0152	TK0158	TK0170
Appearance			
Frequency (Khz)	55.5±1	55.5±1	55.5±1
Direction angle (°)	X: 85 Y: 45	X: 90 Y: 45	X: 100 Y: 50
Decay time (ms)	0.9~1.5	≤1.50	1.0~1.45
Detection range* (mm)	≥2.5	≥2.5	≥2.5

*   75mm tube measurement

Ultrasonic Parking Assist Sensor

Features

- Long detection range, up to 5m
- Built-in circuit which matches the self-developed transducer
- IP69 protection class, superior weather resistance, stability and anti-interference

Applications

-Parking assist system

AK2 Ultrasonic Sensor

Features

- Long and short range (APA & UPA) fusion
- Codable modulation to reduce interference
- DSI3 interface for fast signal propagation
- Functional safety (ASIL B) level

Applications

- Auto Parking Asist (APA)
- Automated Valet Parking (AVP)

Model	VU0001-001	VU0002-001	VU0004-001	VU0005-000
Appearance				
Frequency (Khz)	48	55.5	55.5	48
Directivity (°)	X: 60 Y: 60	X: 90 Y: 45	X: 90 Y: 45	X: 60 Y: 60
Max.range* (mm)	5000	2500	2500	5000
Accuracy (cm)	≤ ±5	≤ ±5	≤ ±5	≤ ±5
Communication Protocol	LIN 2.2	LIN 2.2	I/O	I/O
Protection class	IP69	IP69	IP69	IP69

*Φ75mm tube measurement

Model	VU0012
Appearance	
Frequency (Khz)	55.5
Directivity (°)	X: 120 Y: 60
Max.range* (mm)	150~5500
Accuracy (cm)	±3
Communication Protocol	DSI3
Protection class	IP69

*Φ75mm tube measurement

Ultrasonic Transducer for CPD

Features

- Quality control standard of Automotive OEM manufacturers
- Oustanding consistency and stability
- High sensitivity and low power consumption

Applications

- Rear occupant alert system

MEMS Ultrasonic Sensor for CPD

Features

-High sensitivity, quickly detect breathing or small movements
-Not affected by light, temperature and humidity
-Low power consumption

Applications

- Rear occupant alert system

Model	TO0101-004&TO0104-004	TO0019-000&TO0020-000
Appearance		
Frequency (Khz)	40±1.0	40±1.0
S.P.L (dB)	117~122	≥115
Sensitivity (dB)	-60~-55	≥65
Operating TEMP. (℃)	-40~+90	-40~+90
Housing material	ABS	ABS
Size (mm)	Φ10.0 X 7.1	Φ16.0 X 12.0

Model	AW101
Frequency (Khz)	50±2.5
Size (mm)	4.5x4.5x2
Detection range (cm)	20~150
Field of View (°)	180
Protection class	IP67

Life Detection Module

Features
- Compact size, with a mounting hole of only 2.2mm
- Vital signs detection is possible
- Low cost of ownership

Applications
- Child presence detection (CPD)
- Rear Occupant Alert (ROA)

Haptic Feedback Actuator

Features
- High sensitivity and stable performance
- Low power consumption
- Better dust / water proof

Applications
- Display touch panel
- Car central control screen

Model	AW103
Detection range (cm)	20~150
Field of view (°)	±60
Communication Protocol	CAN
Operating voltage (V)	12
Size (mm)	28x24x1.2

Model	HM0873	HM0003	HM0007	HM0011-000	HM0011-001
Appearance					
Operating voltage (V)	-100 ~ +200 (15ms max)	-30 ~ +100 (15ms max)	-30 ~ +100 (15ms max)	+15~ +55 (15ms max)	+15~ +55 (15ms max)
Layer(s) of ceramic	Single Layer	Multi-Layer (7 Layers)	Multi-Layer (3 Layers)	Multi-Layer (12 Layers)	Multi-Layer (12 Layers)
Capacitance (nF)	6±20%	400±20%	150±20%	180±20%	240±20%
Size (mm)	Φ15x0.25	Φ21x1.55	Φ24x0.46	9x4x1.41	12x4x1.65

Ultrasonic DEF/AdBlue Quality Sensor

Features
- High reliability
- High accuracy

Applications
-SCR system for Diesel Engines

DEF/AdBlue Level Sensor

Features
- Continuous measurement
- High accuracy　Four times as high as the traditional liquid level sensors
 -No moving part

Applications
-SCR system for Diesel Engines

Model	UQ0002	UQ0003
Appearance		
Frequency (KHz)	700±100	840±30
Capacitance (pF)	860±22%	750±20%
Protection class	ip67	IP67
Clutter to active signal ratio	1:4	/

Model	UM0059-000
Appearance	
Measurement range (mm)	40~500
Accuracy (mm)	±5
Response time (s)	≤2
Power (V)	12

Ultrasonic Forward Collision Warning Sensor

Features
- Long detection range, up to 5m
- Built-in circuit which matches the self-developed transducer
- IP69 Protection class

Applications
- Forward Collision Warning

Door Hidden Ultrasonic Sensor

Features
- Self-developed matching layer, using ultrasonic penetration technology
- Concealed assembly to maintain beautiful body lines
- Penetrating steel and aluminum materials for accurate detection

Applications
- Automotive door sensing system

Model	VU0001-001	VU0005-000
Appearance		
Frequency (Khz)	48	48
Directivity (°)	X: 60 Y: 60	X: 60 Y: 60
Max.range* (mm)	5000	5000
Accuracy (cm)	≤ ±5	≤ ±5
Communication Protocol	LIN 2.2	I/O
Protection class	IP69	IP69

*Φ75mm tube measurement

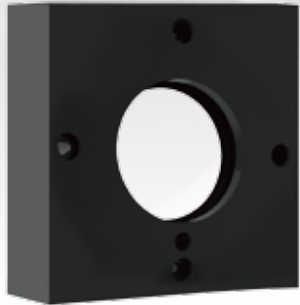| Model	VU0015
Frequency (Khz)	48
Detecting angle (°)	X: 55 Y: 55
Detecting distance (mm)	1800
Accuracy (cm)	≤ ±5
Communication Protocol	LIN 2.2
Protection class	IP69

Ultrasonic Lens Cleaning

Features

- Small size, flexible development, wide range of applications
- Intelligent design can be matched to realize intelligent system control
- Applicable to a variety of scene cleaning, high cleaning efficiency

Applications

- Camera Monitor System (CMS)

Automotive Fragrance Solution

Features

- Anhydrous fragrance expansion and direct atomization to avoid pollution and deterioration
- Integrated design, good sealing performance and no leakage of essential oil
- Adopt POM material, which is corrosion resistant, safe and environmentally friendly

Applications

- Automotive Cockpit Management
- Automobile Car Scenting Systems

Model	UL0001
Applicable Camera Wide-Angle	87°、110°
Voltage (V)	12
Communication Protocol	IIC、UART
Frequency (Khz)	40~3500
Melting Ice Time (s)	≤10 (1.9 mm of ice thickness)
Dewatering time (s)	≤5 (110 ml water)
Current (A)	0.1~2

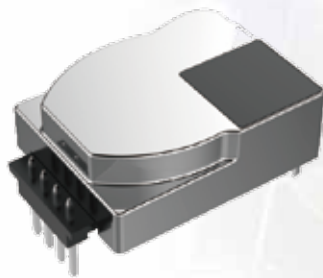| Model	UM0129-002
Voltage (V)	12
Frequency (Mhz)	3.0±0.15
Atomization accuracy (mg)	1
Communication method	LIN

CO$_2$ Sensor

Features
- Excellent precision
- Good consistency

Applications
- Automotive Environmental System

Buzzer

Features
- High reliability
- Small size, easy to install

Applications
- Car security system

Model	GC0001
Appearance	
Effective range (ppm)	0~3000
Max. Range (ppm)	0~5000
Accuracy (ppm)	± 50+5%
Input voltage (V)	(DC)+4.7 to +5.3
Current consumption (mA)	≤150
Size (mm)	33x20x9.2

Model	QJ0853	QJ0861	QJ0890	QJ0855
Appearance				
Frequency (Hz)	2000	3200	2000	800
S.P.L (dB)	≥100(10cm)	≥98(30cm)	≥80(100cm)	88(50cm)
Driving voltage	30Vp-p	12VDC	12Vp-p	12VDC
Size (mm)	Φ30×13.5	Φ42×16.5	38.5×30×27.6	Φ43.2×16.8

Lineup

Products	Appearance	Parking system	Parking assist system	BSD system	SCR system			FCW system	CPD system	Automotive Door Sensing System	Environmental system	Smart Screen	Camera Monitor System	Anti-theft alarm system
Ultrasonic Transducer		■	■	■										
Ultrasonic Sensor		■	■	■				■		■				
MEMS Ultrasonic Sensor									■					
DEF/AdBlue Quality Sensor					■									
DEF/AdBlue Level Sensor					■									
Open-type Ultrasonic Transducer									■					■
Haptic Feedback Actuator												■		
CO2 Sensor											■			
Ultrasonic Lens Cleaning													■	
Automotive Fragrance Solution											■			
Buzzer		■	■	■				■	■	■			■	■