Hanwei | Winsen 炜盛科技

Zhengzhou Winsen Electronics Technology Co., Ltd.

Add: No. 299, Jinsuo Road, High-tech Development Zone, Zhengzhou
P.C: 450001
Tel: 0086-371-67169097
E-mail: sales@winsensor.com
Web: www.winsen-sensor.com
Cell/Whatsapp: 0086-17513179603

Winsen Zhengzhou

Winsen Shanghai

Automotive Sensor Solution

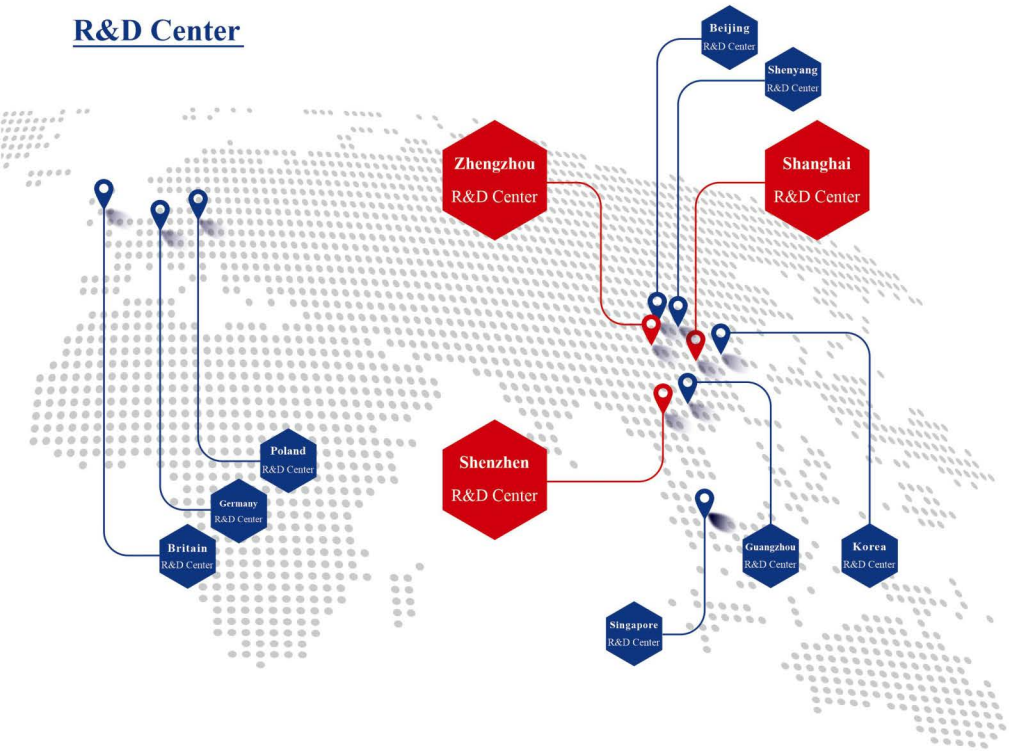
Comfort | Safety| Intelligence

www.winsen-sensor.com

Hanwei | Winsen

Stock Code:300007

R&D Center



Cooperative Customers

CHERY
长安汽车 CHANGAN AUTO
亿华通 SinoHytec
SONGZ 松芝股份
南京协众集团 NANJING XIEZHONG GROUP
iCAR
创为新能源 CREATING NEW ENERGY
CAMC 汉马科技
江苏超力 JIANGSU CHAOLI
SAILING
And More
.....

Established in 2003

Established in 2003, Zhengzhou Winsen Electronics Technology Co., Ltd. (hereinafter referred to as "Winsen"), is a high-tech enterprise with integrated business of R&D, production, sales and solutions and services of sensing products, covering an area of more than 30,000m². In 2009, with Hanwei Electronics Group listed on the Growth Enterprise Market (stock code: 300007), and after more than 20 years of development, Winsen has become a well-known enterprise in the global sensor industry and a leader of the domestic gas sensor industry.

Products of Winsen cover gas sensors of four major principles in Semiconductor, Electrochemical, Catalytic, Infrared., also sensors of categories in infrared detection, pressure, humidity, flow, water quality detection and application programs, a total of seven series, more than 200 categories, which can be used for detection of more than 300 kinds of gases and infrared, pressure, humidity, water quality and other indicators. They are widely used in automotive electronics, industrial safety, civil fire protection, environmental protection, household appliances, medical health, smart city and other fields.

7	200	300+
7 major series of sensors	More than 200 categories	Detection of 300+ indexes

1 Semiconductor	2 Electrochemical
3 Catalytic	4 Infrared

Gas sensors with four working principles

Application N+
Devices for R&D and production 500+
Software copyrights 210+
Invention and utility model patents 100+
R&D staff 100+
Formulate national and industry standards 14+

Listed in 2009

Products have successively passed certifications by

IATF16949, CNAS, GB/T23001, GB/T29490, UL, ISO9001, ISO14001, ISO45001 quality management system, RoHS, etc.

Winsen continues to meet the changing needs of customers with standardized management.

Create Value for Customers, and Create Win-Win Future with Customers

Service Concept

Adhering to the service concept of "Creating Value for Customers and Create Win-Win Future with Customers", Winsen is committed to promoting the healthy development of sensor and Internet of Things industry in the spirit of exploration and innovation, and continues to create a safe, environmental protection, healthy and intelligent production and living environment with advanced sensor technology.

The First Listed
Gas Sensor Enterprise in China

Council Member
of China Instrument Manufacturer Association

Council Member
Unit of China Instrument and Control Society

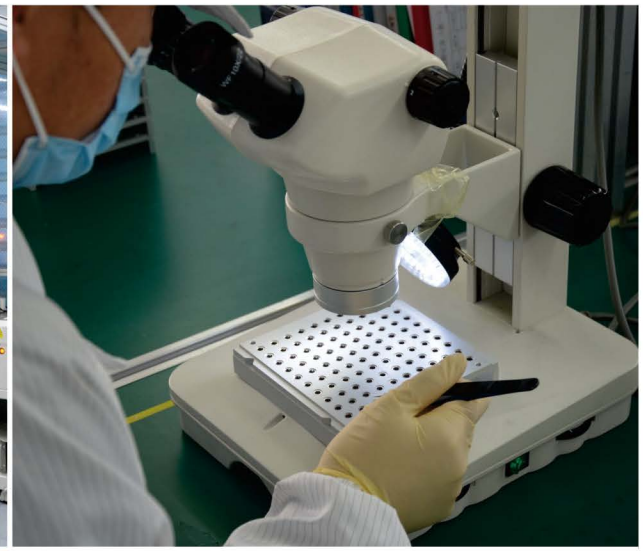
Council Member
of Sensitive Components and Sensors Branch of China Electronic Components Association

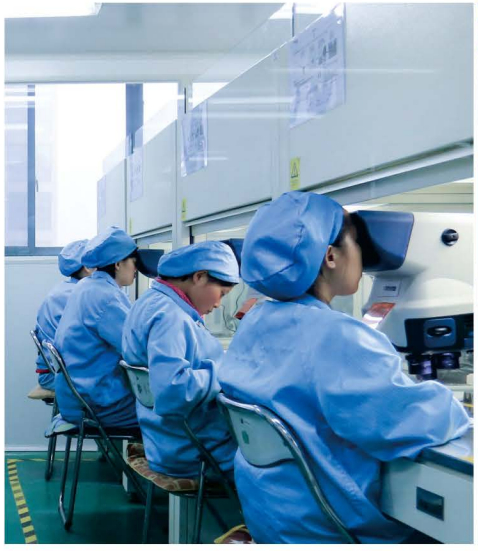
Shenyang Academy of Instrumentation
from Sensor Branch of China Instrument Manufacturer Association

Analytical Instruments Sub-Technical Member
from Industrial Process Measurement and Control of Standardization Administration ofChina (SAC/TC124/SC6)

Technical Committee for Standardization of Components of Instrumentation for Machinery Industry

National Technical Committee of Explosion-Proof Electrical Equipment Standardization (SAC/TC9)





Henan Province Gas Sensing Functional Materials and Gas Sensor Engineering Technology Research Center

Zhengzhou Trace Gas Detection Instrument Engineering Technology Research Center

Zhengzhou Coal Mine Safety Monitoring Engineering Research Center

National Enterprise Technology Center

Henan Internet of Things Engineering Research Center

Henan Province Trace Gas Detection Technology

Instrumentation Engineering Technology Research Center

Participated in the formulation of national, industry and enterprise standards, and successively participated in the formulation of industry standards for flow sensors, catalytic sensors.

Honor and Qualification

IATF 16949:2016
Automobile Quality Management System Certification

CNAS Certification

UL Certification

GB/T 29490-2013
Intellectual Property Management System Certification

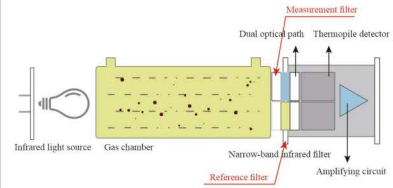
Invention Patent Certificate

ISO 14001:2015
Environmental Management system Certification

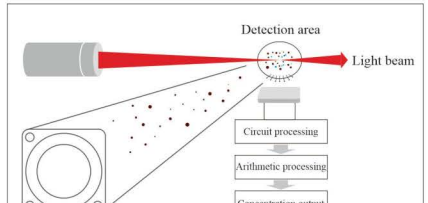
ISO45001:2018
Occupational Health and Safety Management System Certification

ISO 9001:2015
Quality Management System Certification

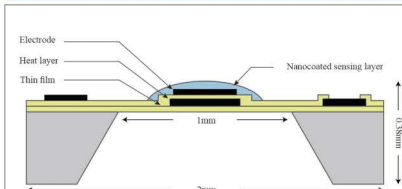
Infrared Gas Sensor Technology



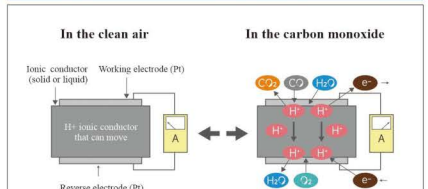
Mie's Scattering Particulate Sensor Technology



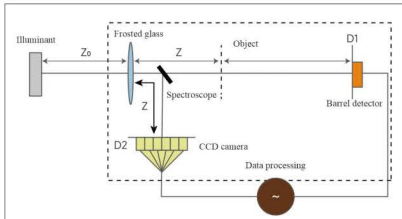
MEMS MOS Gas Sensor Technology



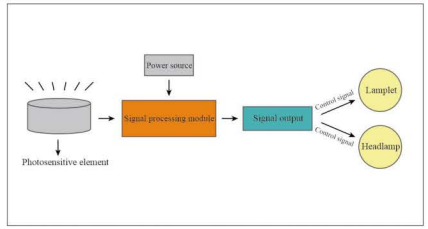
Electrochemical Gas Sensor Technology



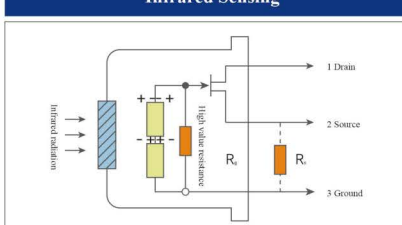
Ghost Imaging System Schematic



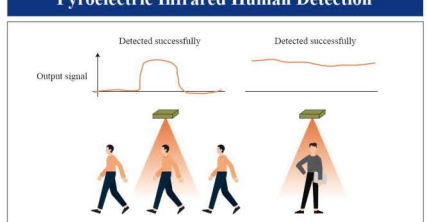
Photoelectric Conversion



Infrared Sensing

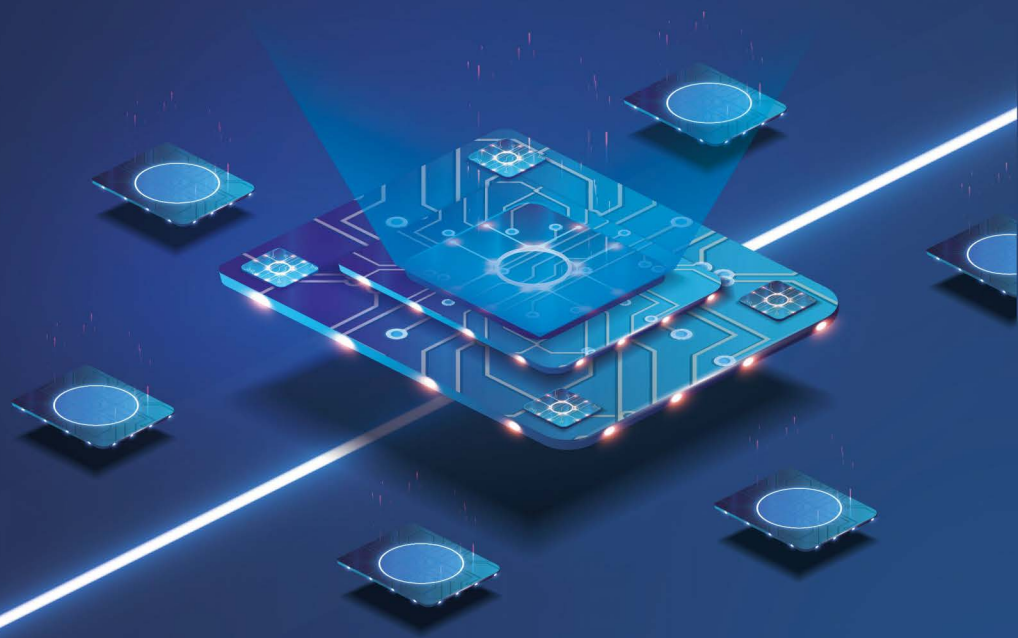


Pyroelectric Infrared Human Detection



Integrated Solution Expert of Automotive Sensor

Hanwei | Winsen 炜盛科技



Automobile is an important application field of sensors, and it is also the foundation of future automobile intelligence.

Automotive sensors have the function of measuring and detecting the internal and external information of the car, which is crucial for the systematic, standardized and safe operation of the overall function of the car. Broadly speaking, there are sensors of powertrain control system, vehicle control system, body control system, information and communication system and air quality system.

How to use sensor technology to help finished automobile manufacturers bring comfort, safety and intelligent driving experience to consumers is a topic for each sensor manufacturer to strive for innovation and breakthrough. As a professional automotive sensor sensors integrated solution expert, we master the core sensing technology, always focus on customer needs, and provide customers with a full range of product solutions and technical services in the field of automotive sensing.

At present, Winsen has obtained supply qualifications from many OEM projects, and owns various series of sensor products for on-board comfort, safety and smart, providing perfect solutions for new energy automobiles with excellent performance, reliable quality and professional technical service.

Comfort Product Line

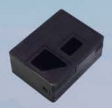
Air Quality Sensor (AQS)

Carbon Dioxide Sensor

All-in-one Air Quality Sensor

PM2.5 Single/Dual Channel Laser Dust Sensor

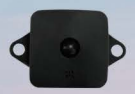
Smart Product Line



Light and Rainfall Composite Sensor

Light Sensor

Life Legacy Sensor



Anti-intrusion Sensor

Safety Product Line

Vehicle Hydrogen Leakage Sensor

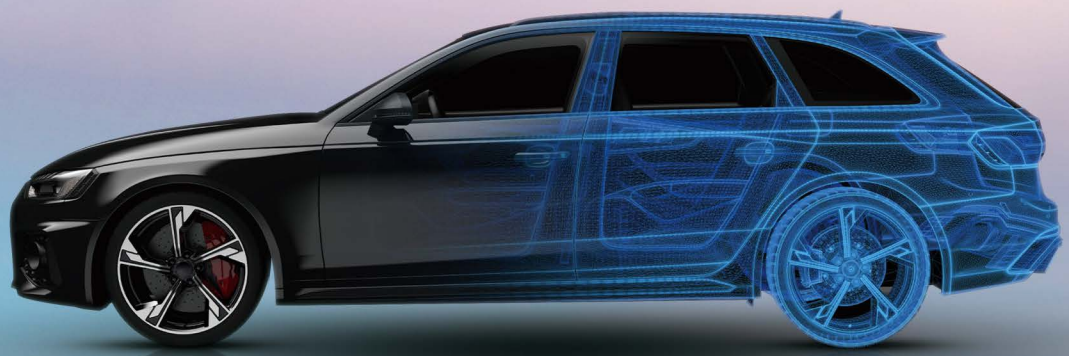
Natural Gas Leakage Sensor

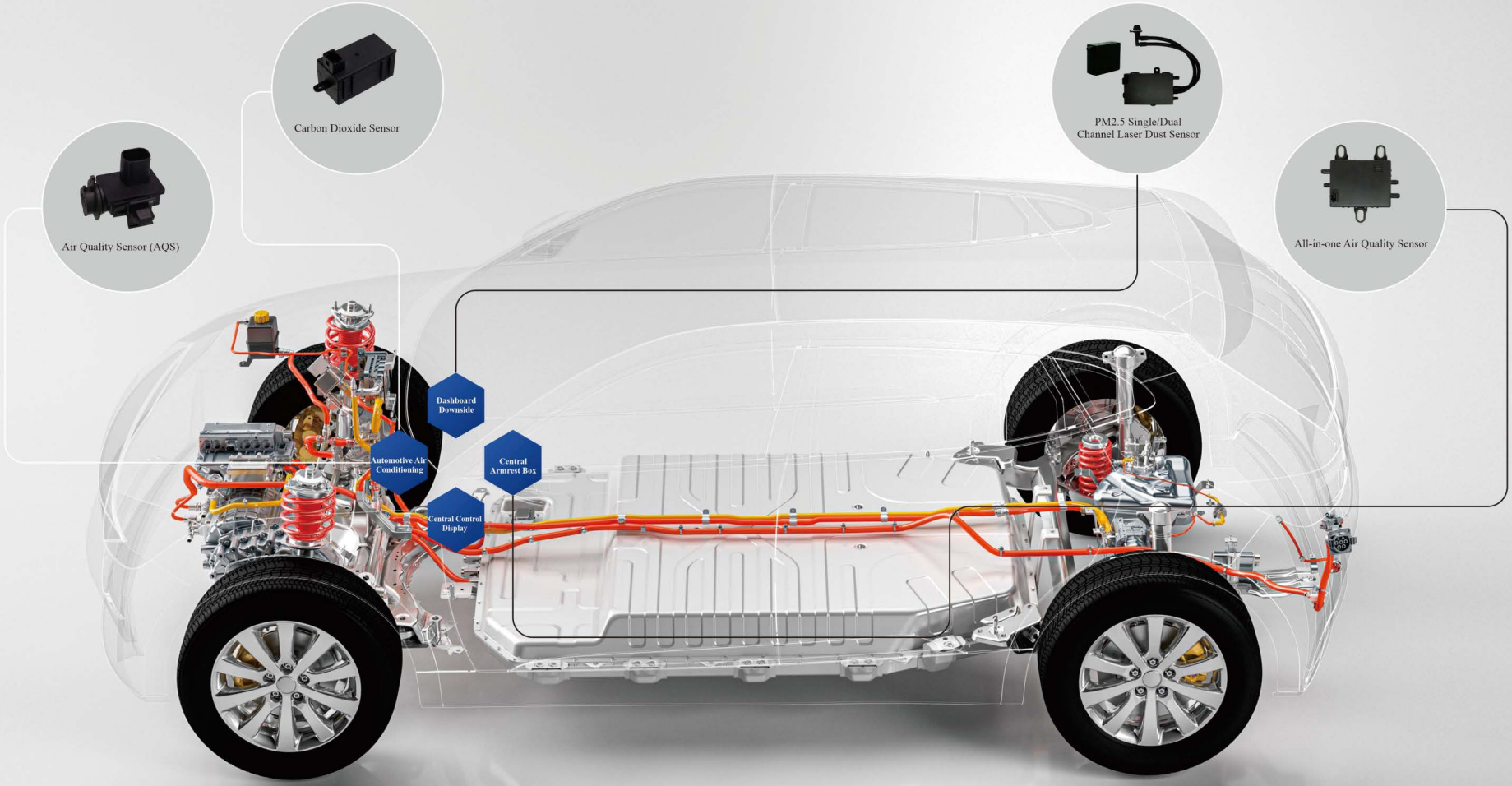
Thermal Runaway Aerosol Monitoring Sensor

On-line Water Conductivity Sensor

Lithium Battery Thermal Runaway All-in-one Sensor

Alcohol Detection Sensor




Carbon Dioxide Sensor
Air Quality Sensor (AQS)
PM2.5 Single/Dual Channel Laser Dust Sensor
All-in-one Air Quality Sensor
Dashboard Downside
Automotive Air Conditioning
Central Armrest Box
Central Control Display

Air Quality Sensor (AQS)

Product introduction

Air Quality Sensor (AQS) is a digital, low-power, miniaturized automotive-grade sensor used in automotive air conditioning. It adopts MOS gas sensor, MEMS manufacturing process and high-performance microprocessor, with a built-in intelligent algorithm, which can automatically adjust the sensitivity and baseline of the sensor according to the environment and operating conditions. It has high sensitivity, small size and precision. It can be used to detect the air pollution level of the internal and external environment of the car, such as the exhaust gas emitted by the car, so as to control the intake valve of the car air conditioner and keep the air in the car fresh.

Product characteristics

- •MEMS manufacturing process
- •High performance microprocessor
- •Built-in intelligent algorithm

- •High sensitivity
- •Compact and precise

- •Stable and reliable
- •Power consumption
- •Anti-electromagnetic interference

Application fields


Car Air Conditioning System


Car Purifier


Car Detector

Technical parameters

Detection principle	MOS
Detection gases	CO/HC、NOx、NH_3
Power supply voltage	DC 9V~16V
Operating current	<50mA(@12V power supply)
Sleep current	<10uA(@12V power supply)
Interface level	12V
Preheating time	30s
Operating temperature	-40°C~85°C
Operating humidity	5~95% RH (no condensation)
Storage temperature	-40°C~125°C
Weight	<20g
Connection type	Buckle, latch, clip
Protection level	IP66
Output mode	PWM/LIN

* Please refer to the product specifications for specific parameters

Carbon Dioxide Sensor

Product introduction

Carbon Dioxide Sensor is a digital, low-power, miniaturized automotive-grade sensor used in automotive air conditioning. It adopts non-dispersive infrared (NDIR) principle to detect CO_2 in the air, with good selectivity, no oxygen dependence, long service life, built-in temperature compensation, excellent linear output. The LIN digital signal output mode can be used to detect and warn the driver fatigue caused by high CO2 concentration in the cockpit.

Product characteristics

- •Universal small sensor
- •Long service life

- •High sensitivity
- •Power consumption

Chamber is electroplated
- •Water and corrosion resistant
- •Resistance to water vapor interference
- •Not poisoned

Application fields


Car Air Conditioning System


Car Detector


Car Fresh Air System

Technical parameters

Detection gas	CO_2
Power supply voltage	DC 9V~16V
Average current	<40mA(@12V power supply)
Peak current	≤125mA(@12V power supply)
Interface level	12V
Measurement range	400ppm~10000ppm
Preheating time	20s
Response time	T_{90}<60s
Operating temperature	-40°C~85°C
Operating humidity	0~95%RH (no condensation)
Weight	27g
Life span	>10 years
Output mode	LIN

* Please refer to the product specifications for specific parameters

PM2.5 Single/Dual Channel Laser Dust Sensor

Product introduction

PM2.5 Single/Dual Channel Laser Dust Sensor adopts the Mie's scattering principle to detect dust particles inside/outside. It has good consistency and stability through professional algorithms and calibration detection process. It adopts CAN/LIN signal output mode, which is convenient to use and small in size for easy integrated application.

Product characteristics

- •Good consistency
- •Good stability

Easy to use, small size, easy integrated application

Real-time response, accurate data, the minimum resolved particle diameter of 0.3μm

Application fields


Car Air Conditioning System


Car Front Loading Market


Car Air Purifier

Technical parameters

Detection particle size range	0.3~10μm
Effective range	0~1000μg/m³
Detection interval	1s
Detection accuracy	±15μg/m³（＜100μg/m³） ±15%（100-1000μg/m³）
Power-on stability time	30s
Power supply voltage	DC 9V~16V
Operating current	Single-channel <60mA, dual-channel <300mA
Response time	T90<30s
Operating temperature	-40°C~85°C
Storage temperature	-40°C~85°C
Output mode	CAN/LIN

* Please refer to the product specifications for specific parameter

All-in-one Air Quality Sensor

Product introduction

All-in-one Air Quality Sensor is an integrated, miniaturized product for automotive air conditioning that integrates functions of multiple gas detection sensors and uses advanced manufacturing processes and high-performance microprocessors to detect the integrated air quality of the internal and external environment of the car.

Product characteristics

Universal module, multiple gases can be detected, easy to use

Built-in temperature sensor for temperature compensation

CAN communication mode, digital output, more intuitive signal display

- •High sensitivity
- •High resolution
- •Low power consumption
- •Long life

Application fields


Car Air Conditioning System

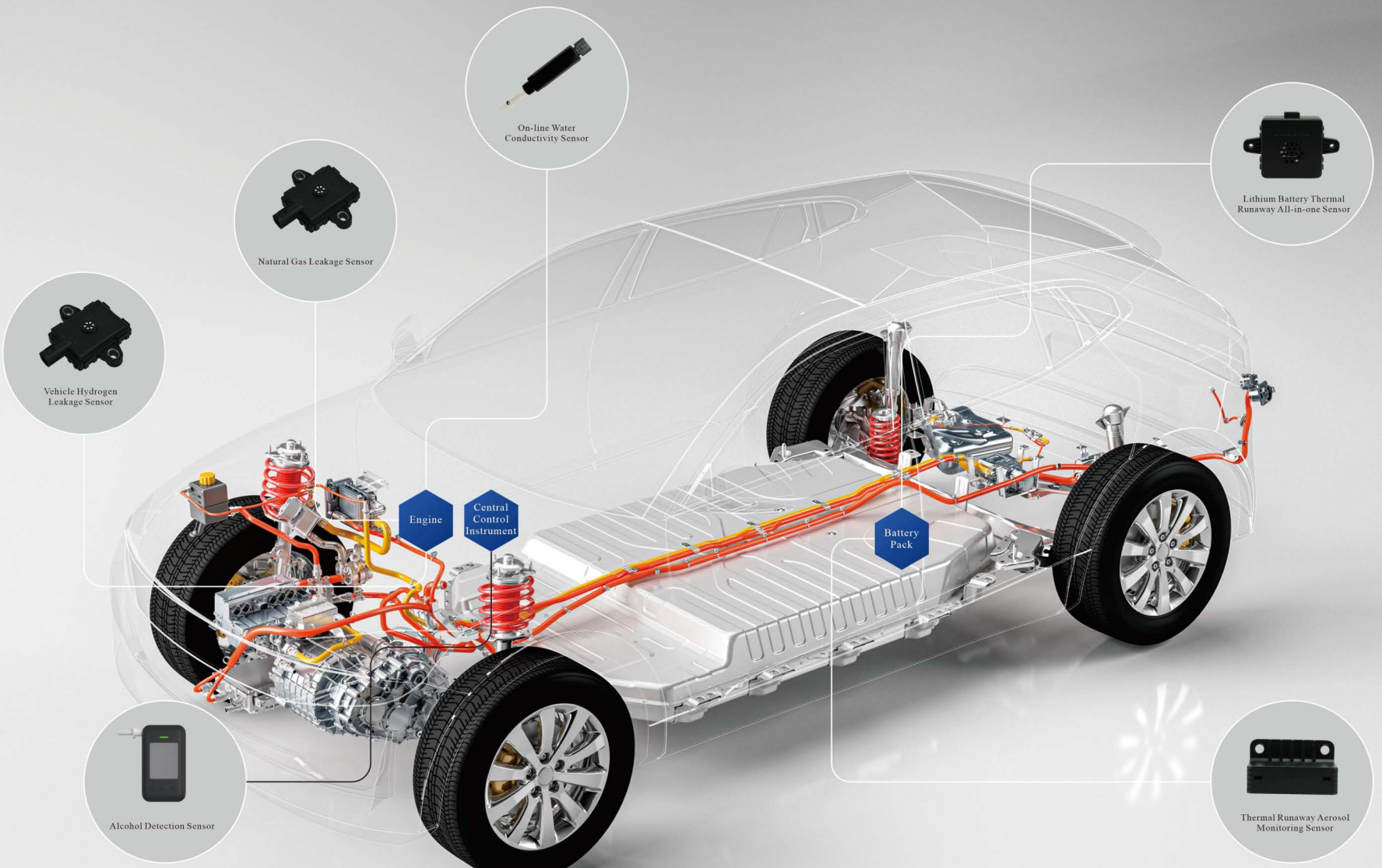

Car Purifier


Car Detector

Technical parameters

Detection target	CO2, PM2.5, AQS, temperature and humidity
Power supply voltage	DC 9V~16V
Operating temperature	-40°C~85°C
Storage temperature	-40°C~85°C
Operating humidity	0~99% (no condensation)
Detection range and accuracy	CO2:400~10000ppm; (±75ppm/±10% reading value) ±15μg/m³(＜100μg/m³)；±15%(100~1000μg/m³) AQS: Level output Temperature: -40°C~125°C ±0.3°C Humidity: 0~100%RH ±3%
Data refresh	≤1s
Response time	T90<15s
Output mode	CAN

* Please refer to the product specifications for specific parameter


On-line Water Conductivity Sensor
Natural Gas Leakage Sensor
Vehicle Hydrogen Leakage Sensor
Lithium Battery Thermal Runaway All-in-one Sensor
Engine
Central Control Instrument
Battery Pack
Alcohol Detection Sensor
Thermal Runaway Aerosol Monitoring Sensor

Vehicle Hydrogen Leakage Sensor

Product introduction

Vehicle Hydrogen Leakage Sensor is mainly used in hydrogen fuel cell engine and hydrogen gas supply pipeline system to monitor hydrogen leakage. It adopts MEMS process catalytic combustion sensor to detect hydrogen concentration, and is a high-performance sensor made by closely combining mature detection technology and high quality design circuit.

Product characteristics

- MEMS process, intelligent algorithm
- Anti-electromagnetic interference
- CAN interface output
- Excellent repeatability and stability
- Long service life

Application fields


Hydrogen Vehicle


Hydrogen Production


Hydrogen Storage


Hydrogen Transport

Technical parameters

Detection principle	Catalytic combustion
Detection gas	Hydrogen
Power supply voltage	DC 9V~16V
Measuring range	0~40000ppm
Detection accuracy	±10% above1%H_2
Response time	T_{80}≤3s
Recovery time	＜10s
Rated current	＜25mA
Power consumption	＜0.5W
Operating temperature	-40℃~85℃
Operating humidity	≤95%RH(no condensation)
Storage temperature	-40℃~125℃
Protection level	IP67
Catalytic condition	The oxygen concentration is not less than 15%
Output mode	PWM/CAN/ analog signal

* Please refer to the product specifications for specific parameter

Natural Gas Leakage Sensor

Product introduction

Natural Gas Leakage Sensor is a digital, low-power, miniaturized sensor used in gas fuel engine and gas supply pipeline system. It adopts the combination of aerobic catalytic sensor and high-performance microprocessor to detect the combustible gas leakage in gas engine and pipeline system.

Product characteristics

- Adopt the principle of aerobic catalysis and gather the signal conditioning
- Signal response is linear output, high sensitivity, low power consumption
- The corresponding concentration value can be output by CAN communication

Application fields

Natural gas automobile fuel system

Technical parameters

Detection principle	Catalytic combustion
Detection gases	Natural gas, liquefied gas, coal gas, alkanes and other flammable gases
Power supply voltage	DC 9V~16V
Operating current	<50mA(@12V power supply)
Measuring range	0~100%LEL
Interface level	12V
T90 time	≤10S
Recovery time	≤30S
Protection level	IP67
Operating temperature	-40℃~85℃
Operating humidity	≤95%RH(no condensation)
Storage temperature	-40℃~125℃
Catalytic condition	The oxygen concentration is not less than 15%
Output mode	CAN

* Please refer to the product specifications for specific parameters

Lithium Battery Thermal Runaway All-in-one Sensor

Product introduction

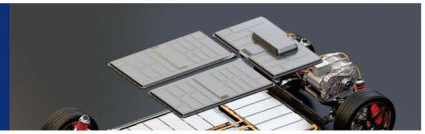
Lithium Battery Thermal Runaway All-in-one Sensor can effectively monitor the CO2, CO, VOC concentration, temperature and pressure released before the battery thermal runaway trigger, and transmit the measurement signal to the BMS through the CAN bus, with accurate measurement, fast response time, less cross interference, low power consumption, long life and high reliability.

Product characteristics

- Automotive-grade mature circuit design, adapt to harsh vehicle environment
- Intelligent algorithm, achieve multi-sensor multi-mode measurement
- Protection level up to IP65
- Digital interface output
- Long service life

Application field

Automotive battery safety monitoring



Technical parameters

Applicable media	CO, CO2, VOC, pressure, temperature
Power supply voltage	DC 9V~16V
Detection range	CO:0~1000ppm
	CO₂:400ppm~10000ppm
	VOC:200ppm~10000ppm
	Pressure: 0~130kPa
	Temperature: -40℃~200℃
Response time	T90<15s
Operating temperature	-40℃~85℃
Protection level	IP65
Output mode	CAN

* Please refer to the product specifications for specific parameters

Thermal Runaway Aerosol Monitoring Sensor

Product introduction

Thermal Runaway Aerosol Monitoring Sensor is mainly used in the battery pack of electric automobile. It adopts the principle of light scattering to monitor the presence of aerosols (particulate matter). The monitoring value is transmitted to the battery management system of the automobile through CAN communication, which responds quickly and accurately senses the thermal runaway situation according to the aerosol concentration.

Product characteristics

- Smart monitoring
- Fast response
- Low consumption and high efficiency

Application field

Monitor thermal runaway events in lithium-ion battery packs and energy storage system of electric automobile

Technical parameters

Detection medium	Aerosol
Power supply voltage	DC 9V~16V
Measuring range	0~10000μg/m³
Accuracy	≤±15% when the threshold concentration is 5,000μg/m³
Low power wake-up threshold of the sensor	5000μg/m³
Rated current (mA)	<30mA, continuous operation mode <0.5mA, low power mode
Operating temperature (℃)	-40℃~85℃
Signal period	1s
Output mode	CAN

* Please refer to the product specifications for specific parameters

On-line Water Conductivity Sensor

Product introduction

On-line Water Conductivity Sensor is an electrochemical conductivity detection module. By applying periodic excitation signals at both ends of the electrode, different measurement signals are generated according to the different conductivity of the liquid to be measured, so as to calculate the impedance of the solution to be measured and measure the conductivity of the solution.

Product characteristics

- Adopt M22*1.5/NPT 1/2 pipe thread, easy to install in the pipeline or tank
- IP68/IP6K9K protection level, CAN/ analog quantity;
- Easy to connect to third party devices such as PLCS, DCS, industrial control computers, universal controllers, paperless recording instruments or touch screens;

Application field

Electrical conductivity detection in the field of automotive fuel cell antifreeze

Technical parameters

Measuring range	0.01~20 uS/cm
Resolution	0.01
Accuracy	±1.5%F.S.
Operating temperature	-40℃~90℃
Operating pressure	<0.6 MPa
Power supply voltage	DC 18~32V
Wetted material	SUS316L/PVDF/POM
Installation method	M22*1.5/NPT 1/2 pipe thread
Power consumption	<1W
Protection level	IP68/IP6K9K
Weight	130±10g
Output mode	CAN/ analog quantity

* Please refer to the product specifications for specific parameters

Alcohol Detection Sensor

Product introduction

Alcohol Detector is a sensor for detecting alcohol content of exhaled air. The core component adopts electrochemical fuel cell alcohol sensor and achieves temperature compensation with on-board temperature sensor. It has the characteristics of high precision, high sensitivity and strong anti-interference ability, and the integrated pressure sensor can detect blowing action, further ensuring the authenticity of measurement. It has a digital interface output, which is easy to use.

Product characteristics

- High precision, high sensitivity
- Provide UART output mode, with digital interface output, easy to use
- High stability, excellent anti-interference ability

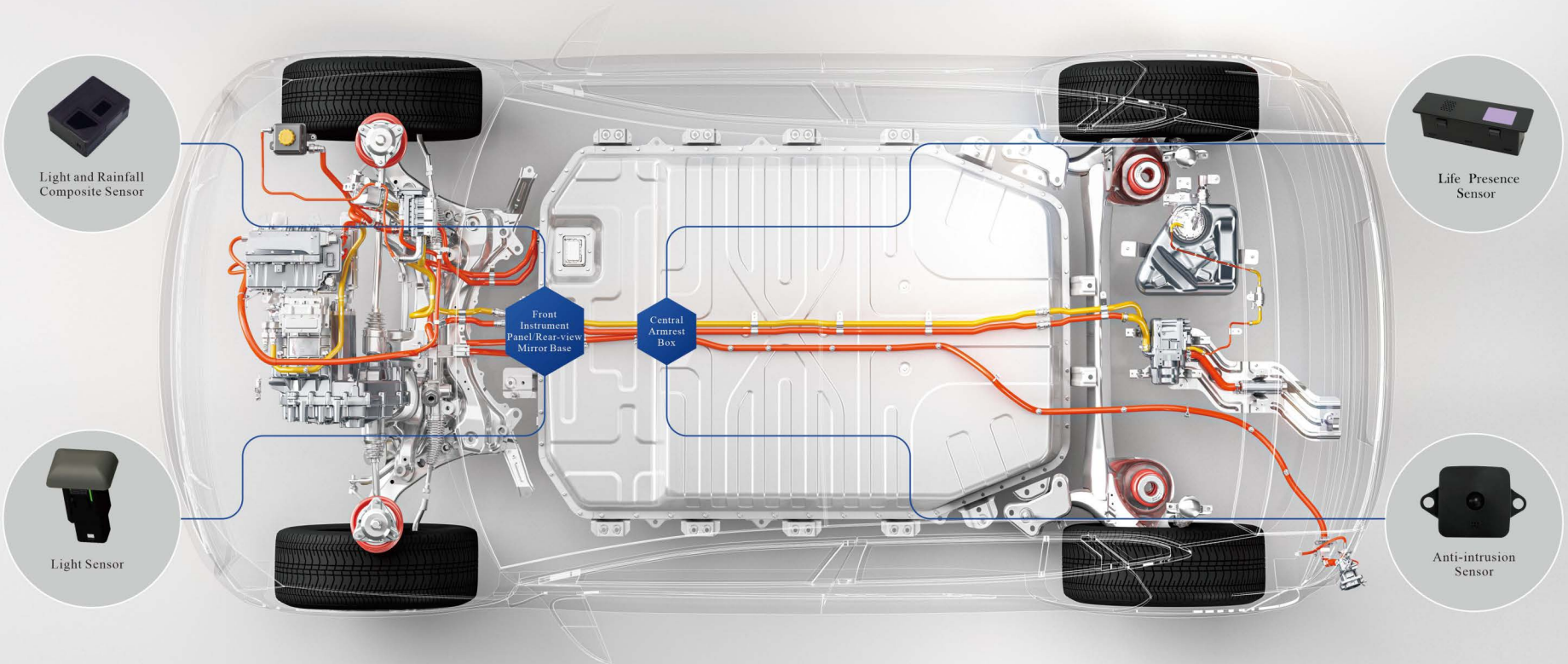
Application field

Alcohol detection of driver's driving behavior for online car-hailing, school bus, "two types of passenger cars and one type of vehicles that transport hazardous chemicals, etc." and trucks

Technical parameters

Detection gas	Alcohol
Measuring range	0~2.0mg/l
Power supply voltage	DC 9V~16V
Operating current	<2.5A(maximum),<1mA(standby)
Resolution	1mg/100mL
Response time	T90<5s(above 0℃); <15s(below 0℃)
Accuracy range	Focus on threshold points, 0~-15% drunk driving: 20mg/100mL Drunken driving: 80mg/100mL
Operating temperature	-40℃~85℃
Operating humidity	5%~90% RH
Output mode	CAN/LIN

* Please refer to the product specifications for specific parameters


Light and Rainfall Composite Sensor
Light Sensor
Front Instrument Panel/Rear-view Mirror Base
Central Armrest Box
Life Presence Sensor
Anti-intrusion Sensor

Light and Rainfall Composite Sensor

Product introduction

Light and Rainfall Composite Sensor integrates the functions of light detection and temperature and humidity from different angles to form a multifunctional five-in-one composite sensor. Using advanced ghost imaging technology, the three-dimensional information of rainfall can be accurately detected. By detecting the amount of water on the front windshield of the car, the automatic control wiper keeps the glass dry and clean, enhances visibility, ensures that the driver is focused on driving, and reduces the potential accident.

Product characteristics

- High signal-to-noise ratio
- Strong anti-interference ability
- High sensitivity
- Differentiation precision of rainfall rating

Application field

Outside light rainfall detection and inside temperature and humidity measurement

Technical parameters

Power supply voltage	DC 6V~24V
Operating temperature	-40℃~85℃
Alarm detection time	Real-time detection
Rainfall detection area	7mm*7mm
Rainfall detection rate	10 frames/s
Rainfall rating	256
Light intensity detection range	1000~50000lx
Field of View	20°
Humidity measurement range	0~100%RH
Output mode	LIN

* Please refer to the product specifications for specific parameters

Light Sensor

Product introduction

Light Sensor uses the ambient light sensor to detect the ambient light intensity, which can output different control signals corresponding to different light intensity levels, so as to control the automatic on and off of the headlights in different lighting environments.

Product characteristics

- Simple principle, simple structure
- Low cost, high cost performance
- Can adjust the threshold voltage, flexible and changeable

Application field

Applied to the detection of light intensity outside the vehicle

Technical parameters

Detection range	1500~6000lx
Detection principle	Environmental light sensor
Operating condition	-40℃~85℃,0~95%RH(no condensation)
Storage condition	-40℃~100℃,0~95%RH(no condensation)
Power supply voltage	DC 9V~16V
Rated voltage	12V
Operating current	≤100mA
Output mode	Low level/suspended state

* Please refer to the product specifications for specific parameters

Life Presence Sensor

Product introduction

Life Presence Sensor uses advanced data fusion technology, combines infrared detection and gas detection and other means and algorithms, and can accurately judge and point out the vital signs and the environment of the vital signs, which is mainly used to detect the existence of life in the vehicle and the danger degree of the environment of the living body.

Product characteristics

- Stable and reliable
- Can detect life signals in a wide range
- Provide a variety of output methods
- Long service life

Application field

Detection of the presence of life in the vehicle and related hierarchical alarm

Technical parameters

Life Legacy Sensor	Power supply voltage	DC 9V~16V
	Operating temperature	-40℃~85℃
	Storage temperature	-40℃~95℃
	Overall power consumption	0.3W(minimum operating condition)
	Size (L*W*H)	150mm*50mm*50mm(customizable)
	Detection Object	Monitor human signals in the range
	Alarm detection time	The first alarm time is less than 10s, and the confirmation alarm time is less than 10min
	Output mode	LIN
Infrared Human Body of Sensing Module	Maximum detection field range (D*L*H)	0.6m*1.4m*0.6m
	First report time	<15s
Sensing Sensor	Detection range	400ppm~5000ppm
	Detection accuracy	±(50+5% reading value)
	Life body detection time	<10min
	Sensor gas response time	T_{90}<30s
Interior Ambient Temperature	Accuracy	±0.5℃
	Resolution	±0.1℃
	Temperature measurement range	-55℃~125℃

* Please refer to the product specifications for specific parameters

Anti-intrusion Sensor

Product introduction

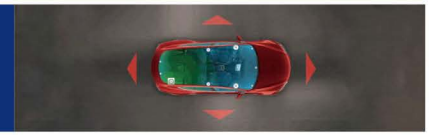
Anti-intrusion Sensor adopts advanced data fusion technology, combines with infrared detection and temperature and other means and algorithms, and can quickly and accurately judge and point out the vital signs and intrusion behavior of the vital signs and can output the corresponding alarm information, which is mainly used to avoid property losses caused by the intrusion of life outside the car into the car.

Product characteristics

- Stable and reliable
- Can detect life signals in a wide range
- Provide a variety of output methods, such as LIN
- Long service life
- 110 — Confirm and output the alarm signal of intrusions in the car

Application field

Detection of the existence of life and life intrusion behavior in cars



Technical parameters

Anti-intrusion Sensor	Power supply voltage	DC 9V~16V
	Operating temperature	-30℃~75℃
	Storage temperature	-40℃~95℃
	Overall power consumption	0.05W
	Size (L*W*H)	38mm*38mm*24mm(customizable)
	Detection Object	Monitor human signals in the range
	Alarm detection time	<1s
	Output mode	LIN
Infrared Human Body of Sensing Module	Field of View	100°
	Maximum detection distance	3m
Interior Ambient Temperature	Accuracy	±0.5℃
	Resolution	±0.1℃
	Temperature measurement range	-55℃~125℃

* Please refer to the product specifications for specific parameters