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VEHICLE ELECTRONICS SENSOR

Application Solutions

Zhengzhou Winsen Electronics Technology Co., Ltd.

COMPANY PROFILE

Established in 2003, Zhengzhou Winsen Electronics Technology Co., Ltd. is a high-tech enterprise, with integrated business of R&D, production, sales and solutions of sensing products, covering an area of 30000 m².

In 2009, Winsen Electronics was listed in Growth Enterprise Market (GEM) with comprehensive strength ranking top in Chinese sensor industry. After more than 20 years development, Winsen has become a leader in Chinese gas sensor field and also grown to be one of the top sensor companies in global wide. Winsen's sensor products cover total 7 categories and 200+ series capable to detect 300+ indexes, including gas sensor based on four principles of semi-conductor, catalytic, electrochemical and infrared absorption, infrared detection sensor, pressure sensor, humidity sensor, flow sensor and water sensor, etc. The products are widely used in industrial safety, civil fire prevention, environmental protection, household appliances, automotive electronics, medical health, and smart city, etc. Moreover, Winsen proceeds to make continuous innovation in new application directions.

7

Categories

200

Series

300+

Detection
Indicators

100+

Patents
Copyrights

500+

Production,
R&D Equipment

N

Application
Occasions

Winsen owns strong strength in R&D: excellent R&D team of more than 100 talents and professionals; more than 500 sets of equipment and devices for production and R&D. Our R&D achievements have been approved by Henan Provincial Science and Technology, and kept synchronous with international advanced level. At present, Winsen has more than 100 patents, more than 10 software copyrights, lead or participated in the formulation of 14 national and industrial standards.

The company has been certified with ISO9001, ISO14001, ISO45001, and IATF16949 systems to regulate its management so as to meet different demand from customers.

Winsen takes it a mission to "create value for customers, and create win-win future with customers". Inspired by pioneering and innovative spirit, Winsen will be dedicated to promoting healthy development of sensing and IoT industries, and using advanced technology to build a safe, green, healthy, and intelligent environment for production and living.

CERTIFICATES



ZHENGZHOU WISEN ELECTRONICS TECHNOLOGY CO., LTD.

VEHICLE ELECTRONICS SENSOR APPLICATION SOLUTIONS

Comfortable

AQS/PM2.5/CO2... air quality detection solutions inside and outside the vehicle

Safe

H2 conductivity analyzer/Coolant temperature/H2 leakage/
Fuel Cell battery safety monitoring solutions

Intelligent

Signs of life /Light & rain volume/ Smart cabin solutions



PM2.5 detection solution for vehicles

PM2.5 Air Quality



Dust & Particulate Matter Sensor

Nowadays, more and more attention is paid to dust pollution such as PM2.5 and PM10 in the air. If there is a large amount of dust particles in the environment, PM2.5 sensor is used to measure the concentration of particles in the car, and the vehicle purifier is linked to improve the air quality in the car, so as to avoid excessive inhalation of dust and damage to the health of human in the vehicles.

PM2.5

PM2.5

In-vehicle CO₂ detection solutions

CO₂ Carbon Dioxide



Vehicle-mounted CO₂ Module

1. There have been many incidents of children death of suffocation after being left in cars. To prevent such tragedy repeating, our company developed carbon dioxide sensor for vehicles. The sensor can detect signs of life in the car and alert car owner to prevent living creatures being trapped in the car for long time, so as to avoid these accidents.

2. When a car is closed for a long time, the driver and passengers will constantly exhale carbon dioxide CO₂. When CO₂ concentration increases to a certain level, human body will feel uncomfortable, such as lack of concentration and drowsy. At this time, the CO₂ gas sensor will trigger air conditioner to switch to external circulation, improving air quality in the car and providing a comfortable experience.

Air quality detection solution inside and outside the vehicle

AQS:CO、NO_x、NH₃

MEMS:VOC_s



MEMS



Vehicle-mounted AQS Module

At present, urban traffic congestion and air pollution are serious problems. The opening of external circulation will cause the cabin to be filled with exhaust gas, resulting in air pollution in the vehicle. But if the internal circulation is open for a long time, air quality in the car will also decline, causing discomfort of human body. Therefore, it is necessary to shift the internal and external circulation according to different conditions and demand. The MEMS gas sensor can detect air quality inside and outside of the vehicle, and the AQS module based on MEMS technology is able to detect air quality outside of the vehicle. They are able to work with air conditioner to shift air circulation in different environment and greatly improve driving experience.



Hydrogen fuel cell detection solutions

Combustible Gas (CH₄) Carbon Monoxide (CO)

CH₄ | CO



Hydrogen Fuel Cell
Conductive Meter



Hydrogen Fuel Cell
Detection Module



Hydrogen Fuel Cell
Conductive Meter

Hydrogen energy can be used in transport, as raw material for petroleum refining, metal refining, ammonia production, for residential heating, cooking and many other fields. Hydrogen energy is potential to be a carrier of integrating different infrastructures as to improve economic efficiency, reliability and flexibility, and many of its applications can reduce carbon emission of electric power and transport sectors. With the gradual popular use of hydrogen energy, the safety problem also emerges gradually. As a colorless, odorless and flammable gas, hydrogen is difficult to detect if leakage happens, and it's easy to cause major safety accidents of fire and explosion resulting in casualties and property loss.

New energy vehicle battery detection solution

Smoke | Humiture | Pressure | CO | TVOC



New All-in-One Battery Safety Detection Module

With the development of electric vehicles, people also put forward higher requirements for the safety of electric vehicles. Faced with the phenomenon of spontaneous combustion of electric vehicle batteries for many times, people also show their concerns about electric vehicles. When the power battery is out of control, carbon monoxide and other toxic gases will be released. At this time, the sensor will detect carbon monoxide and trigger the battery management system to take appropriate measures (such as disconnect the power supply when charging) to avoid accidents and ensure life safety.



Vehicle alcohol detection solutions

HCHO | C₂H₅OH | PM2.5



ZE30

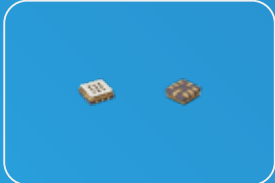


ZE31

Drunk driving and related crimes are strictly cracked down in China. European countries and the United States also attach great importance to the crime of drunk driving. At the end of December 2019, the European Union officially issued the new General Safety Regulation(EU) 2019/2144(shorted as new GSR). The regulation required, starting from July 2022, new models of vehicles to be fitted with an alcohol interlock interface that must meet corresponding technical regulations. The vehicle will not be able to start until driver passes an alcohol breath test.



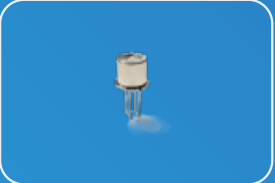
WINSEN SENSOR SERIES



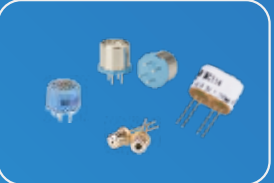
GM-MEMS Gas Sensors



MQ-Semiconductor Gas Sensors



MP-Flat Semiconductor Gas Sensors



MC-Catalytic Gas Sensors



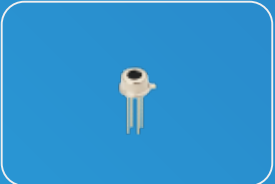
ME-Electrochemical Gas Sensors



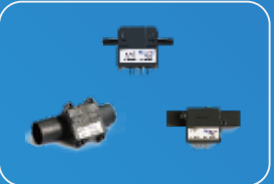
ME-Electrochemical Gas Sensors



Pyroelectric Infrared Sensors



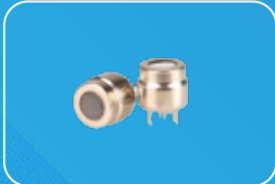
Thermopile Infrared Sensors



Flow Sensors



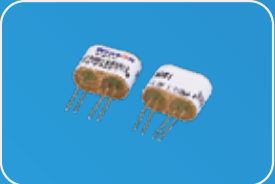
Water Sensors



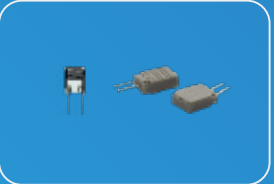
MG-Solid Electrolyte Gas Sensors



MR-Hot Wire Gas Sensors



Thermal Conductivity Gas Sensors

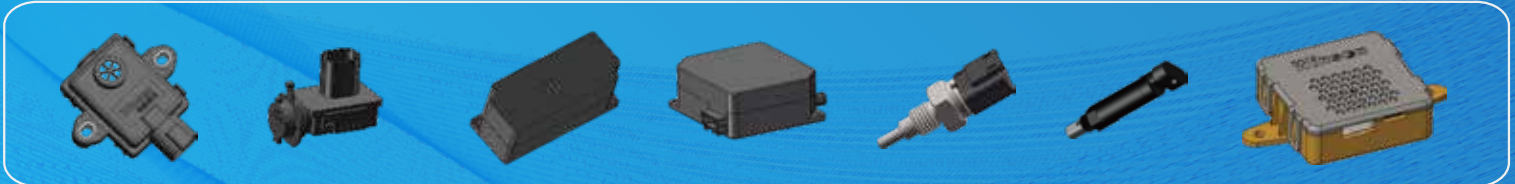


Humidity Sensors



Pressure Sensors

SENSOR MODULES



WINSEN SENSOR APPLICATIONS

