

IoT World, Sensing Leads the Way!

Gas Sensor Product Brochure



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The First Listed Gas Sensor Manufacturer in China



Winsen

Winsen
炜盛科技 | Company Profile

Leading gas sensing solution supplier

领先的气体检测方案提供商



Zhengzhou Winsen Electronics Technology Co., Ltd. founded in 2003 with over 30,000 square meters construction area, is a professional sensor manufacturer specialized in R&D and mass production of gas sensors, gas sensor modules, and other sensors like pressure sensors, flow sensors, PIR sensors, etc.



Winsen's main products include infrared sensor, electrochemical sensor, semiconductor sensor, catalytic sensor, thermal conductivity sensor, solid electrolyte sensor, hot wire sensor, flow sensor, pressure sensor, pyroelectric infrared sensor, etc. Up for now, its sensors have been widely used for safety protection in civil and industrial fields, environmental field, medical field, smart home, HVAC and IoT, etc..



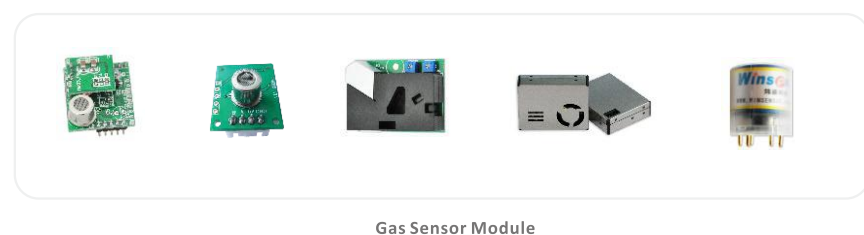
As leading sensor supplier in China, Winsen has served more than 42,000 customers at home and abroad with 300+ model products and 2000+ solutions. We have confidence to become your trusted partner and make joint efforts thus to get mutual benefits and win-win result.



Winsen's Product Line



Gas Sensor Module



Gas Sensor Module

MH- Infrared Gas Sensor

MH series infrared gas sensors are based on infrared absorption principle, and have many advantages like stable performance, good selectivity and long lifespan, etc.. MH series products include MH-4, MH-7, MH-Z and other types. MH-4 series sensors have both analog and digital output, which are small in size and easy to use; MH-7 series products have stable signal output, strong resistance to water vapor interference, which can be used in industrial and coal mine fields; MH-Z series sensors are suitable for detection of carbon dioxide gas in various civil fields such as air conditioning systems, automobiles and some civil and agricultural fields.

ME - Electrochemical Gas Sensor

ME series electrochemical gas sensor is based on electrochemical principle, including toxic gas sensors and oxygen sensor.

A. Toxic gas sensor

ME series toxic gas sensors are based on electric charge released by electrochemical redox reaction of gas to be tested on the working electrode of electrolytic cell under a certain potential condition, has a linear relationship in a certain concentration range with gas concentration. And determine the concentration of gas to be measured by measuring the magnitude of the current. ME series toxic gas sensors have stable and reliable performance, high sensitivity and good selectivity. Products include ME2, ME3, ME4 and other types, Me2 series is a two-electrode electrochemical gas sensor, ME2-CO is mainly used for carbon monoxide gas detection in civil field; ME3 is a three-electrode electrochemical gas sensor for portable instruments; ME4 is a four-electrode electrochemical gas sensor, suitable for portable instrumentation and gas online monitoring instruments.

B. Oxygen sensor

ME series oxygen sensor is an electrochemical gas sensor using the working principle of Galvanic Battery. That is, by measuring the electrolysis current flowing through two electrodes of the sensor, the change in oxygen concentration in the environment can be accurately perceived. ME series oxygen sensors are stable and reliable. The main product is ME2-O2, which is suitable for detection of 0-25% VOL constant oxygen concentration.

MP-Flat Surface Gas Sensor

MP Series flat surfaced semiconductor sensor is a semiconductor gas sensor based on an advanced thick film process. MP series flat surfaced gas sensor has low power consumption, small volume, good consistency, stable and reliable, and is suitable for flammable gas and toxic gas detection in industrial, civil, commercial and other fields.

MC- Catalytic Gas Sensor

MC series catalytic gas sensors are gas sensors based on the principle of contact combustion. The MC series catalytic gas sensors are stable and reliable, and have good anti-vibration performance, anti-carbon deposition, anti-sulfide, anti-silicide poisoning and long lifespan. The products are MC100, MC110, MC200, MJC4 and other types, of which MJC4 has passed national mining product safety certificate. This product is suitable for the

detection of flammable, explosive gases or organic vapor in the range of lower explosive concentration in the fields of industry, coal mine and civil use.

MQ- Semiconductor Gas Sensor

As for MQ series semiconductor gas sensors, under certain conditions (temperature), the measured gas reaches the surface of the semiconductor and chemically reacts with oxygen adsorbed in the surface of the semiconductor. In the process, the charge is transferred, which further causes semiconductor resistance change. The detection of the gas concentration is achieved by measuring the change in the semiconductor resistance. MQ series semiconductor gas sensors have large output variations, high sensitivity, long lifespan, long-term stability, and high resistance to toxic gases and harsh environments in low-concentration gases. The products are MQ, MQ300, MQ200 etc. MQ series is indirect thermal semiconductor gas sensor with good temperature, humidity resistance and good vibration performance. MQ300 series is a direct thermal gas sensor with small size and low power consumption. MQ200 series is self-heating gas sensor with small size and low power consumption. MQ series semiconductor gas sensors are suitable for industrial, civil, commercial and other fields of flammable gas and toxic gas detection.

MD- Thermal Conductive Gas Sensor

MD series of thermal conductive gas sensors are based on the principle that different gases have different thermal conductivity under same conditions. Under certain conditions, the change of measured gas concentration or composition causes thermal conductivity of the working environment, thereby causing a temperature change in the surface of gas sensor, further causing a change in the resistance of the temperature sensing element of gas sensor. Gas concentration can be detected by measuring the change in the temperature sensing resistance of the gas sensor. MD series of thermal conduction gas sensors are stable and easy to use. There are two types of sensors available, MD61 and MD62. MD61 is suitable for 0~100%VOL full range detection of natural gas, liquefied gas, gasoline, alcohol, ketone, benzene, carbon tetrachloride, freon and other gases; MD62 is suitable for carbon dioxide 0~100% VOL full range detection.

MG- Solid electrolyte Gas Sensor

MG series solid electrolyte gas sensors are based on the principle of a solid electrolyte battery. Under certain temperature conditions, when the sensor is placed in the atmosphere to be tested, the electrode reaction of solid electrolyte battery occurs. The potential difference between sensor sensitive electrode and reference electrode conforms to the Nernst equation, and gas concentration can be detected by measuring signal output voltage across the sensor.

MG series solid electrolyte gas sensors have stable performance, high sensitivity and good selectivity. MG811 is suitable for carbon dioxide gas detection in various fields such as industrial, agricultural and civil applications.

MR- Hot Wire Gas Sensor

MR series hot-wire gas sensor, under certain conditions, the measured gas reaches semiconductor surface and undergoes a redox reaction with the adsorbed oxygen on the semiconductor surface and the lattice oxygen of the semiconductor material itself, and the reaction causes a change in the free charge concentration, resulting in semiconductor resistance change. The heat released during the reaction causes the resistance change of temperature sensing element. There two resistors are in parallel, and the gas concentration can be detected by measuring the change of two resistors.

RD- Pyroelectric Infrared Body Induction Sensor

The pyroelectric infrared sensor uses the characteristic of temperature change to detect the infrared radiation. It adopts dual-element compensation method to suppress the interference caused by a change in temperature, thereby improving the working stability of the sensor. It is widely used in many applications, such as safety devices, burglar alarms, induction doors, automatic lamps, smart toys and so on.

GM-MEMS Gas Sensor

The MEMS gas sensor consists of a Si-based micro-hot plate based on a MEMS technology and a metal oxide semiconductor gas-sensitive material having a low conductivity in clean air. When there is a detected gas in the ambient air, the conductivity of the sensor changes. The higher concentration of the gas, the higher conductivity of the sensor. The change in conductivity can be converted to an output signal corresponding to the gas concentration using a simple circuit.

Pressure Sensor

WPAH series ceramic pressure sensor adopts imported ceramic base, ceramic piezoresistance pressure sensor made by thick-film technology. Ceramic is a kind of material with high elasticity, corrosion resistance, wear resistance, resistance to impact and vibration. Ceramic's good thermal stability and high temperature sintering process of thick film make the working ceramic pressure sensor's operating temperature range up to -40 ~ 125 °C. The high elasticity and creep resistance of ceramic make the ceramic pressure sensor have good long-term stability.

Micro Flow Sensor

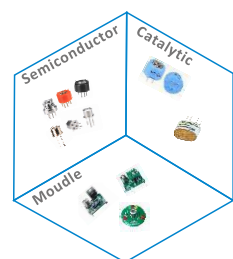
F series thermal mass flow sensor adopts advanced MEMS silicon technology. It has the characteristics of low power consumption, small size, without stable voltage compensation, impact resistance, stability and reliability. It is suitable for the medical industry, instruments, automation, gas metering and other fields of fluid detection.

Gas Sensor Module

Winsen series gas sensor module adopts professional gas sensing technology and combined with advanced micro-process technology. Winsen series gas sensor modules have stable performance, high reliability, easy to use, and suitable for a variety of gas environment detection.

Safety Gas Detection

Winson's domestic gas sensors are mainly used in civil fields to detect and analyze safety gases like flammable gas and carbon monoxide gas, and also air quality gases, alcohol gas and human exhaled gas, etc... It has gas sensors and modules such as infrared carbon dioxide gas sensor, civil electrochemical carbon monoxide gas sensor, flat-surfaced semiconductor gas sensor, catalytic gas sensor, semiconductor gas sensor, thermal conductive gas sensor, and solid electrolyte gas sensor.



Flammable gas

MP series flat-surfaced semiconductor gas sensor, MC100 series catalytic gas sensor, MQ series semiconductor gas sensor and other gas sensors and modules are suitable for the detection of flammable gases such as natural gas, liquefied gas and artificial gas. MP series products are stable and reliable, with good anti-seismic performance, low power consumption, small size and good consistency. MC100 series products are stable and reliable, with good anti-seismic performance, anticarbon, anti-sulfide, anti-silicide poisoning ability and long lifespan. They are widely used in civil gas leakage detection.

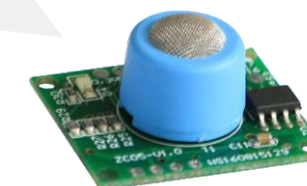
Product	Model	Natural gas	Liquefied gas	Artificial gas
Catalytic sensor	MC106	√	√	√
	MC106	√	√	√
Flat-surfaced semiconductor sensor	MP-4	√		
	MP402	√		
	MP-5	√	√	√
Semiconductor sensor	MQ-2	√		
	MQ-4	√		
	MQ-5	√	√	√
	MQ-6	√	√	
	MQ-8	√		√
	MQ-7B	√		
Hot wire gas sensor	MR511	√	√	√
Module	ZP04	√	√	√
	ZP14	√	√	√
	ZC05	√	√	√
	ZC08	√	√	√
	ZP13	Smoke		



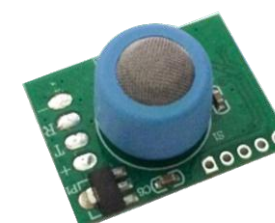
ZP04



ZP14



ZC05



ZC08



ZP13

Carbon monoxide

ME2-CO series electrochemical carbon monoxide gas sensor, MQ-7B semiconductor gas sensor and other gas sensors and modules, they are suitable for carbon monoxide gas detection in civil fields, ME2-CO and ME2-CO-φ14 products, with low power consumption and long lifespan. It is stable and reliable, and is widely used in civil applications, garage and other domestic fields for carbon monoxide detection.

Product	Model	Detection range
Electrochemical gas sensor	ME2-CO	0-1000ppm
	ME2-CO-φ14*50-C	
	ME2-CO-φ14*14	
Semiconductor sensor	MQ-7B	0-500ppm
Module	ZE15	0-500ppm



MQ-7B



ME2-CO



ZE15



ME2-CO-φ14*50-C



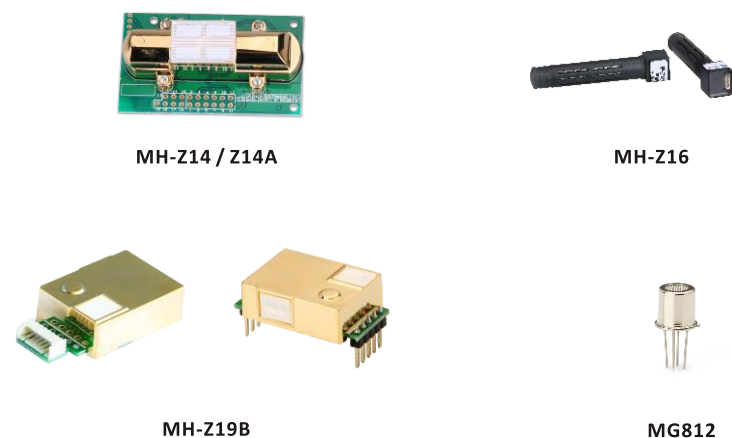
ME2-CO-φ14*14

Healthy Gas Detection

1. Carbon dioxide

MH-Z series infrared carbon dioxide gas sensor and MG812 solid electrolyte gas sensor are suitable for carbon dioxide gas detection in civil fields. Among them, MH-Z series infrared carbon dioxide gas sensor products have good selectivity, long life and digital output function. The range is 0-5%VOL, which is easy to use.

Product type	Model	Detection range
NDIR carbon dioxide gas sensor	MH-Z14	0-5%VOL optional
	MH-Z16	
	MH-Z14A	2000ppm, 5000ppm, 1%VOL optional
	MH-Z19B	
Solid electrolyte gas sensor	MG812	350-1000ppm

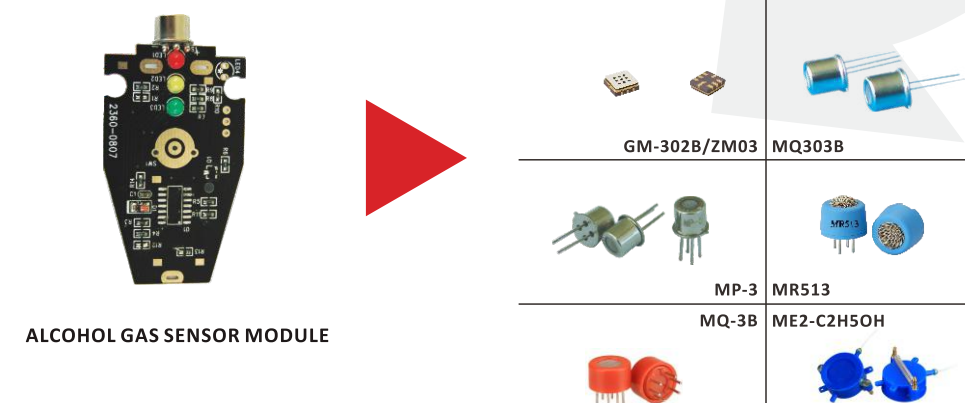


2. Alcohol gas

ME2-C2H5OH electrochemical alcohol gas sensor, MP-3 planar semiconductor alcohol gas sensor, MQ-303B semiconductor alcohol gas sensor, MR513 thermal linear alcohol gas sensor and other gas sensors and modules, suitable for alcohol gas detection.They have stable reliability and sensitive which meeting different levels of demand.

Guide of Alcohol Gas Sensor Selection

Gas sensor type	Application type			
	High-end alcohol detector	Mid-end alcohol detector	Low-end alcohol detector	
	Police alcohol detector	Commercial alcohol detector	LCD display	LCD display
Electrochemical gas sensor	√	√		
Flat semiconductor gas sensor		√		
Thermal linear gas sensor		√		
Parathermal semiconductor gas sensor		√		
Direct thermal semiconductor gas sensor			√	√
Self-heating semiconductor gas sensor				√



3.VOC

MP and MQ series semiconductor gas sensors and their modules are suitable for the detection of formaldehyde, benzene, ammonia, sulfides, nitrogen oxides and other pollutants in the air. In particular, the advantage of flat semiconductor gas sensor MP series is low power consumption, small size, long life, good stability etc. It can detect the level of pollutant gas in the ppm level. It is suitable for long-term power supply in the greenhouse, and is widely used in air quality testing , automatic ventilation system, air purifier and airflow control equipment.



4.PM2.5

Infrared principle

The dust sensor is a sensor that detects dust particles in the air by a method of performing particle counting, which is based on principle of infrared optics of infrared light scattering on dust particles.This product adopts PWM pulse width modulation and particle counting principle can sensitively detect particles with 1 μm diameter. Built-in heater for automatic air intake.The advantage is small size, light weight, easy installation and simple maintenance. It is suitable for air fresheners, air purifiers, air conditioners, ventilation equipment and environmental monitoring equipment.



Winson 炜盛科技 | Environmental & Healthy Gas Sensor

Laser principle

The laser dust sensor is a versatile and compact module. It has good consistency and stability with UART output and PWM output for easy use. Small size for easy integration. Mainly used in air purifiers, fresh air systems, portable instruments, air quality monitoring equipment, air conditioners, smart home equipment and other places.



ZH03B



ZH06



ZH08

5. Formaldehyde

Civil electrochemical formaldehyde sensor has the advantages of low power consumption, high precision, high sensitivity, wide linear range, strong anti-interference ability, excellent repeatability and stability, etc. It is mainly used for detection of formaldehyde in civil and environmental protection fields.



ME2-CH2O



ZE07-CH2O



ME2-CH2O-16*15



ZE08-CH2O/ZE08B-CH2O

6. Ozone

Civil electrochemical ozone sensor has the advantages of low power consumption, high precision, high sensitivity, wide linear range, strong anti-interference ability, excellent repeatability and stability, and is mainly used for ozone detection in civil and environmental protection fields.

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ME2-O3



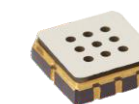
ZE15/ZE25/ZE27-O3

7. Mouth Smell

The gas sensing material used in mouth odor sensor is a semiconductor material having low electrical conductivity in clean air. When target gas is present in the environment in which the sensor is located, conductivity of the sensor increases as target gas concentration increases. The change in conductivity can be converted to signal output corresponding to gas concentration using a simple circuit.



MQ316



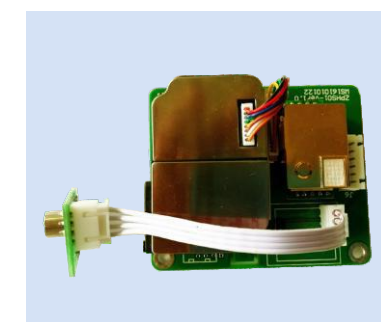
GM-512B

8. Multi-in-one

Multi-in-one sensor module is an all-in-one module that integrates electrochemical formaldehyde sensor, VOC sensor, laser dust sensor, infrared carbon dioxide sensor, and temperature and humidity sensor. (Formaldehyde sensor and VOC sensor are alternative).



Formaldehyde version



VOC version

Industrial gas sensors of Winsen Electronics are mainly used in detection of flammable gases, toxic gases, oxygen, carbon dioxide and other gases in industrial field, which include infrared gas sensors, electrochemical gas sensors, catalytic gas sensors, thermal conductive gas sensors, and industrial semiconductor gas sensors.

Industrial Flammable Gas Detection

1. Infrared combustible gas sensor
MH series infrared flammable gas sensors are suitable for hydrocarbon detection, which include MH-440D and MH-741A with range of 0-100% VOL(optional).

Sensor Type	Detecting Gas Range	Application	
		Portable instrument	Online detector
MH-440D	0-10%VOL optional	√	√
MH-741A	0-100%VOL optional		√



2. Catalytic sensor
MC series industrial catalytic sensors are suitable for the detection of flammable, explosive gases or organic vapors in lower explosive concentration range of various industrial fields such as petroleum and chemical industry. The product is stable and reliable, with good seismic performance, strong resistance to carbon deposition, anti-sulfide and anti-silicide poisoning, and long lifespan.

- The gas types detected by MC series industrial catalytic components include:
- Class A gas - alkane gas
 - Class B gas - enyne gas
 - Class C gas - organic vapors such as alcohols, ethers, aldehydes, ketones, etc.
 - Class D gases - organic vapors such as benzene, toluene, xylene, gasoline, diesel, etc.
- Users need to select the corresponding carrier catalytic element according to the test object.

Sensor Type	Detecting Gas Range	Application	
		Portable instrument	Online Detector
MC105B	0-100%LEL	√	√
MC112	0-100%LEL	√	√
MC113	0-100%LEL	√	
MC114	0-100%LEL	√	√
MC115	0-100%LEL	√	√



3. Thermal conductive gas sensor
MD61 thermal conductive gas sensor, is suitable for natural gas, liquefied gas, coal gas, gasoline, alcohol, ketone, benzene, carbon tetrachloride, freon and other gases 0-100% VOL full range concentration detection.

Sensor Type	Detecting Gas Range	Application	
		Portable instrument	Online Detector
MD61	0-100%VOL	√	√



Industrial Toxic Gas Detection

ME series industrial electrochemical gas sensors and MQ series industrial semiconductor gas sensors are suitable for toxic gas detection.

ME series industrial electrochemical gas sensor, include ME3, ME4 and other types. ME3 is suitable for portable instruments; ME4 is suitable for portable instruments and online detectors. MQ series industrial semiconductor gas sensors are used for the detection of toxic gases such as hydrogen sulfide, ammonia, organic vapors and halogens.

Detecting Gas	Product Category		
	ME4	ME3	MQ
Carbon monoxide	√	√	√
Hydrogen sulfide	√	√	√
Ammonia	√	√	√
Chlorine gas	√	√	√
Hydrogen chloride	√	√	√
Sulfur dioxide	√	√	√
Phosphine	√	√	√
Ethylene oxide		√	√
Nitrogen dioxide		√	√
Methanol		√	√
Ethanol		√	√
Isopropanol		√	√
N-butanol		√	√
Octanol		√	√
Terpineol		√	√
Methyl mercaptan		√	√
Ether		√	√
Formaldehyde		√	√
Acetone		√	√
Ethyl orthosilicate		√	√
Benzene		√	√
Toluene		√	√
Tetrahydrofuran		√	√



ME3 SERIES TOXIC GAS SENSOR



ZE12



ME4 SERIES TOXIC GAS SENSOR



MQ SERIES INDUSTRIAL TOXIC GAS SENSOR



ZE03

Industrial Oxygen Detection

ME2 series electrochemical oxygen sensors are suitable for detection of constant oxygen in the range of 0~25% concentration. Available in ME2-O2 (20mm) and ME2-O2 (32mm) two type models, the former of which is used for portable instruments and online detectors while the latter is used for online detectors.

Sensor Type	Detecting Gas Range	Application	
		Portable instrument	Online Detector
ME2-O2 (20mm)	0~25%	√	√



ME2-O₂(20mm)

Industrial Carbon Dioxide Gas Detection

MH series infrared carbon dioxide gas sensors are suitable for carbon dioxide gas detection in industrial field. It has MH-410D and MH-711A two models with range: 0~2000ppm and 0~20%VOL(optional).

Sensor Type	Detecting Gas Range	Application	
		Portable instrument	Online Detector
MH-410D	0~5%VOL optional	√	√
MH-711A	0~30%VOL optional		√



MH-410D



MH-711A

Industrial Application

ZE03 is a high-performance, general-purpose electrochemical series module that uses three-electrode electrochemical gas sensor and high-performance microprocessor to measure corresponding gas by installing different gas sensors.

It assembles with built-in temperature sensor for temperature compensation, which makes it could detect gas concentration accurately. It has digital output and analog voltage output at the same time, which is easy to use and calibrate that greatly shorten the development period.

It combines electrochemical sensors and circuits to meet customers' needs for different gas detection applications.



ZE03

Detectable gases:

CO, O2, NH3, H2S, NO2, O3, SO2, CL2, HF

ZE11 is a general-purpose and high-performance electrochemical module. It can detect gases such as benzene, toluene, xylene, ethylene oxide, and vinyl chloride present in the air based on electrochemical principle, it has good selectivity and stability. It has built-in temperature sensor for temperature compensation, digital output and analog voltage output for easy use.

The ZE11 is a universal gas module designed and manufactured by combining proven electrochemical detection technology with sophisticated circuit design. It's suitable for the detection of benzene, toluene, xylene, ethylene oxide, vinyl chloride, styrene, etc. in petroleum and petrochemical industry and environmental protection field.

Detectable gases:

Benzene, Toluene, Xylene,
Ethylene Oxide, Vinyl Chloride, Styrene, etc.



ZE11

Atmospheric Monitoring Application

ZE12 electrochemical module is a general module, which uses electrochemical principle to detect CO, SO2, NO2, O3 and other gases in the air, with good selectivity and stability. Built-in temperature sensor for temperature compensation; It's convenient to use with digital output and analog voltage output.

Ze12 is a general gas module designed and manufactured by combining mature electrochemical detection technology and superior circuit design.

It is mainly used in urban air and enterprise environment monitoring, factory area unorganized emission pollution gas monitoring, emergency monitoring environmental evaluation monitoring, portable instrument, air quality monitoring equipment, smart home equipment, etc.



ZE12

Detectable gases:

CO, SO2, NO2, O3

ME4-CO/SO2/NO2/O3-E4 sensor. The detection gas and O2 have corresponding reductive oxidation reactions on the working electrode and the counter electrode, and release corresponding charge to form a current. The current is proportional to gas concentration in accordance with Faraday's law, and detection gas concentration can be determined by measuring the current. The fourth auxiliary electrode of the sensor is used to compensate zero current, so that it has characteristics of strong signal level and low zero current.

It is mainly used in urban air and enterprise environment monitoring, factory area unorganized emission pollution gas monitoring, emergency monitoring environmental evaluation monitoring.

Detectable gases:

CO, SO2, NO2, O3



ME4-CO/SO2/NO2/O3-E4

Smart City

Ze03 electrochemical module with a variety of gas types and measurement ranges. These modules mainly detection for toxic, harmful, combustible and other gases.

Model	Application	Output	Sensor component
ZE03	Toxic and harmful gas monitoring	Analog voltage, UART	ME3 series sensor
ZE05/ ZE05B	Toxic gas monitoring	Analog voltage, UART, DAC	ME4 series sensor
ZC01/ 02/ 09	Industrial combustible gas module	Indicator lamp/Trembler	Combustible gas sensor
Z003	RS485/4~20mA conversion module	RS485/ 4~20mA	ZE03/ ZE12/
ZE11	VOC type gas monitoring	Analog voltage, UART, DAC	ME3 series sensor
ZE12	Air environment gas monitoring	UART, DAC	ME4 series sensor
Z101	VOC type gas monitoring	Analog voltage, UART	PID sensor
ZEHS04	Air monitoring all-in-one module	UART, RS485	ZE12, dust etc.



ZE03-CO/H2S/O2



MH-440D

Automotive Electronic Application

Vehicle series modules, covering electrochemical, catalytic, thermal conductor, hot-wire, semiconductor and other sensor modules, with good selectivity, stability, multiple target gas detection, a variety of types are optional. Various gas detection and monitoring for automotive electronics application.



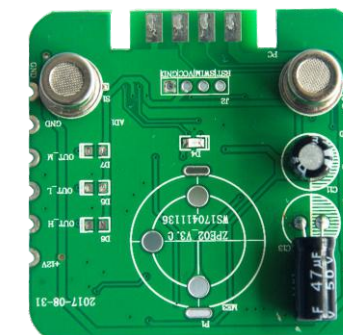
ZE21-CS



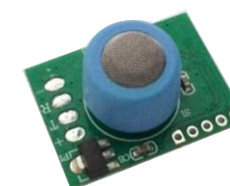
ZR02



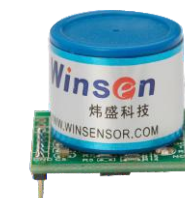
ZR01



ZPE02



ZC08-H2



ZE07-H2

Human Body Induction Sensing

1. Analog pyroelectric motion sensor

RD series pyroelectric infrared sensors and modules have high sensitivity, superior signal-to-noise ratio, high stability to temperature changes, strong anti-interference ability, and superior cost performance. They are applicable to various sensing devices in civil fields, such as safety devices, burglar alarms, induction doors, automatic lamps, smart toys, etc.



RD-624/623



ZRD SERIES MODULE

2. Digital pyroelectric motion sensor

The digital pyroelectric sensor integrates sensitive element of analog pyroelectric sensor and signal processing chip into sensor shielding cover. The sensitive element transfer infrared signal generated by external human body movement to high-precision digital chip for processing by "Differential input". After signal processing, the sensor gives digital signal for easy using.



RDA223



RDA224



RDA226

3. Thermopile sensor

Thermopile sensor is a new CMOS-compatible infrared sensor with high infrared response rate, high repeatability and high reliability. The sensor is packaged in a TO-46 metal case with an IR filter window. And high-precision thermistor chip is built in inside, which can compensate ambient temperature.



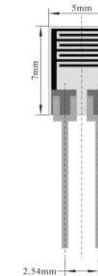
MRT Module

4. Temperature and humidity sensor and module

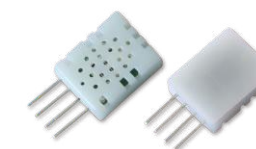
temperature and humidity sensor adopts macromolecule moisture sensitive material.

With humidity increasing, macromolecule will swell, interior free volume will be bigger, carrier will be increased and the activated energy of macromolecule polyelectrolyte counter-ions will decrease, drift mobility will increase and impedance will decrease.

Digital temperature and humidity sensor module adopts a macromolecule resistance type humidity element and an NTC temperature element, with a high performance micro-controller. It has an excellent performance, with ultra-fast response and strong anti-interference features.



MS-Z3



ZS03/ZS05

5. IC chip and Fresnel lens

Fresnel lens are mounted in front of the sensor. The len is made of transparent plastic, and is divided into several equal parts to form a lens with a special optical system. With corresponding amplifying circuit, it can amplify the signal by more than 70 decibels, so that people's movement in the range of 10 to 20 meters can be measured.

A high-performance signal processing integrated circuit, is equipped with a pyroelectric infrared sensor and a few external components to form a passive pyroelectric infrared switch. It can automatically and quickly open all kinds of incandescent lamps, fluorescent lamps, buzzers, automatic doors, electric fans, dryers and automatic hand basins, etc., especially suitable for aisles, corridors, and other sensitive area of enterprises, hotels, shopping malls, warehouses and family, or automatic lighting and alarm systems of safe areas.

Winsen Technology
Lens Product

Winsen Technology
IC Product

Flow Sensor

Micro flow sensor adopts thermodynamic principle to detect gas flow, and it has high accuracy and good repeatability. Built-in temperature sensor makes the product has the function of professional temperature compensation calibration. Meanwhile, it has linear analog voltage output and is very convenient to use.

Features of flow sensors:

Latest MEMS Sensor chip technology

High accuracy, quick response, good repeatability

Detection micro flow accurately

Completely calibrated and temperature compensated

Main applications of flow sensors:

Industrial process control

Air and environment protection

Portable detector

Medical oxygen supply



Wind Speed Sensor

F6000 is a new wind speed sensor based on MEMS technology and is developed by Winsen. Its consistency, response speed, sensitivity and other technical parameters are better than other similar products. F6000 wind speed sensor uses analog voltage output, three pins only, compact and lightweight, easy to assemble, is conducive to rapid deployment of applications. F6000 uses the latest MEMS technology, has good anti-jamming performance, ultra-low temperature drift, thus to ensure that this wind speed sensor has a high sensitivity, and has same performance in the low wind speed measurement. At the same time, F6000 wind speed sensor is stable and reliable, and also has overcome the shortcomings of traditional wind cup sensor such as slow response speed and short service life. At present, the sensor has gradually replaced traditional wind speed sensor and is widely used in various fields such as weather monitoring, industrial and mining safety and so on.



Pressure Sensor

1. Ceramic pressure sensor

WPAH01 ceramic pressure sensor adopts ceramic base, made into ceramic piezoresistance pressure sensor with thick-film technology. Ceramic is a kind of material with high elasticity, corrosion resistance, wear resistance, resistance to impact and vibration. The ceramic's high elasticity and creep resistance make the ceramic pressure sensor have good long-term stability. Besides, the corrosion resistance character makes the sensor have unique advantages in the application such as the refrigeration, chemical and environmental protection and other fields.



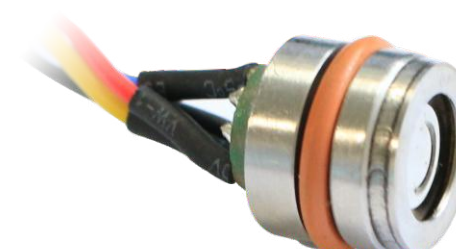
WPAH01/WPAH02



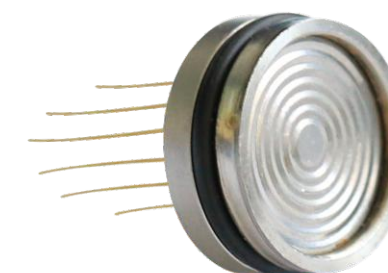
WPAH03

2. Isolating film pressure sensor

Isolating film pressure sensor is a high-performance, low-cost, all-stainless steel isolated pressure sensor, which uses semiconductor silicon isolation technology to prevent diffusion of ions with temperature through insulating layer, thus to have lower drift under temperature-changing environment, so this sensor has good temperature characteristics.



WPAK61



WPAK62

3. General type ceramic pressure transmitter

General type ceramic pressure transmitter has small size and light weight, it is convenient and easy to install. It adopts pressure sensor made by Winsen and it converts pressure into standard voltage signal output through a high reliable amplifying circuit and accurate temperature compensation circuit. The whole stainless delicate structure and plastic elements with high-strength enhance its anti-corrosion character, which enables the product to meet different applications.



WPCH01



WPCH02



WPCH04

4. General type isolation-film pressure transmitter

Isolation-Film Pressure Transmitter is a widely used pressure measurement products. Adopting high-precision pressure-sensitive film and signal processing unit, special design of anti-over-voltage, impact resistance, anti-ice blocking, and anti-electromagnetic interference, it can be long-term reliable used in a variety of harsh workplace or environment. It also meets explosion-proof and marine-related products' design requirements.



WPCK61

