

TIANBANG TECH

湖北天榜科技

A leading manufacturer focused on motorcycle, automotive, & truck sensors



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PART 1

Company Introduction

Company Profile



HUBEI TIANBANG Established in 2006

leading manufacturer focused on motorcycle, automotive, & truck sensors

Oxygen sensor | EGT Sensor | Nox sensor



Certified IATF 16949

Covering area 20,000 m²

7 departments &
100 employees

Equipped with advanced production &
testing equipment

With excellent quality & service, we have established long-term partnerships with numerous automotive manufacturers & distributors worldwide, with customers across Europe, Latin America, & the Middle East

Upholding the principle of 'Quality Matching & Competitive Pricing,' we are committed to offering high-quality products at highly competitive prices while continuously innovating to better serve our customers. We look forward to collaborating with global partners for mutual success & creating a bright future together

Company Size



Global Business: Products are exported to over 40 countries

Including the United States, Mexico, Brazil, Germany, Italy, Pol&, Spain, Turkey, Dubai, & others.



Factory Area

20,000 m², including 3,000 m² dust-free workshop



Production Capacity

Three semi-automatic intelligent production lines, annual output reaching 2 million units



Annual Output Value

80 million RMB



Employee Size

100 employees, covering departments such as R&D, production, & quality control

Development History



2006

Brand Establishment

Launched the Tianbang brand oxygen sensors, covering four major global brands: Bosch, Denso, Delphi, & NTK.

2009

Technological Breakthrough

Collaborated with renowned domestic universities to develop domestically produced ceramic oxygen sensor chips, filling the technical gap in the country & enhancing independent R&D capabilities.

2012

Production Expansion

Relocated to Hubei Province & built the first phase of the factory, covering an area of 4,000 square meters

2019

Product Line Expansion

Launched nitrogen oxide sensors & exhaust temperature sensors, investing \$1.5 million in technology R&D & patent applications to enhance product diversity.

2016

International Market Expansion

Obtained self-managed export rights, with products sold to over 30 countries, & passed IATF 16949 quality certification to enhance international competitiveness.

2024

Production Technology Innovation

Introduced the latest technology to address industry pain points, continuing to lead the global market with high precision, reliability, & competitiveness.

2020

Production Capacity Upgrade

Built the second phase of the factory, expanding the area to 20,000 square meters, upgrading to fully automatic intelligent production lines to enhance production efficiency & product quality.

R&D & Technical Strength



R&D Team

As a leader in the automotive sensor industry, our company has always focused on R&D & innovation. Through long-term close collaboration with renowned domestic universities & research institutions, we have laid a solid foundation for technological advancement, ensuring our products maintain a leading position in the market.

R&D Investment

Since the company's establishment, we have adhered to the business philosophy of 'Technology-Driven, Quality-Oriented.' We commit 15% of our sales profits to product R&D to ensure continuous innovation & outstanding quality.

Core Patents & Technologies



Has obtained **15** utility model patent certificates

PART 2

Quality Assurance

Production Facilities & Equipment



By using efficient production technologies, we enhance production efficiency, product quality, & competitiveness, while reducing resource waste & environmental impact.

Automation & Robotics Technology

Tianbang utilizes automated production lines, industrial robots, & smart manufacturing systems to reduce human intervention & enhance production efficiency & consistency



Fully Automatic Welding Equipment



Fully Automatic Assembling Equipment



Fully Automatic Packaging Equipment



Precision Manufacturing

Utilizing high-precision processing equipment & measurement tools to strictly control processing tolerances & quality standards.

Key Process Assurance



Sealing Components

Using high-temperature resistant, corrosion-resistant, & excellent insulating ceramic materials (such as alumina Al_2O_3 & zirconia ZrO_2), we combine them with sensing elements through hot pressing & sintering processes to form a sealed structure, preventing moisture, dust, & chemicals from affecting the sensing elements, ensuring the long-term stability & reliability of the sensors.



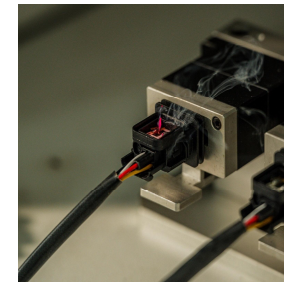
Installing Leading Wires

Using nickel solder with good conductivity & high-temperature resistance, the leads are connected to the platinum electrodes through spot welding or ultrasonic welding techniques. The weld points must be secure to ensure the stability of the electrical connection & avoid sensor failure due to poor connectivity.



Assembling Sensor Housings

Using stainless steel materials that are stable in high-temperature environments, the sealed sensing elements & welded leads are secured within the housing & sealed. This protects the internal components, provides mechanical strength & protective features, ensuring the reliable operation of the sensors in harsh environments.



Calibration & Standardization

Calibration of the sensor is performed using standard gases, measuring the output signal & comparing it with standard values. Based on the calibration results, parameters such as sensitivity & bias are adjusted to ensure the output signal falls within the standard range, with multiple tests conducted to ensure the accuracy & stability of the sensor under various operating conditions.

Quality Control & Management Process



Incoming Quality Control (IQC)

Ensure that all raw materials meet standard specifications & conduct quality checks before production. Any materials that do not meet requirements should be promptly addressed or returned to the supplier.

In-Process Quality Control (IPQC)

Conduct periodic quality checks at every key stage of production to ensure that the manufacturing process adheres to established quality standards.

Finished Product Inspection (FQC)

After the production of finished products, a final quality inspection is conducted. This includes functional testing, appearance inspection, & dimensional measurement to ensure that the products meet all technical specifications.

Equipment & Process Control (EPC)

Maintain the stability of production equipment & process parameters by ensuring regular maintenance & calibration, to prevent product quality issues caused by equipment failures.

Teaching & Training (T&E)

Ensure that production & quality control personnel receive adequate training to understand product standards & quality control procedures, thereby reducing the likelihood of human errors.

Data Analysis & Feedback (DAF)

By collecting & analyzing production data, customer feedback, after-sales service data, & more, identify potential quality issues & take measures to improve products & processes.

Quality Control & Certification



Quality Control Process

Laboratory Testing: Conduct rigorous testing under laboratory conditions, including sensitivity, linearity, response time, & the effects of temperature & humidity



Continuity Testing

Test the electrical performance of the packaged chip to ensure there are no breaks or failures.



Voltage Withstand Testing

Ensure that the packaged chip is free from micro-cracks to guarantee its reliability in high-voltage environments.



Hermeticity Test

Detecting the leakage amount after packaging & sintering to ensure the product's air tightness & long-term reliability.



Performance testing

Simulate the use of the oxygen sensor in real vehicles to ensure its performance meets the requirements.

Quality Control & Certification



Long-Term Reliability Testing

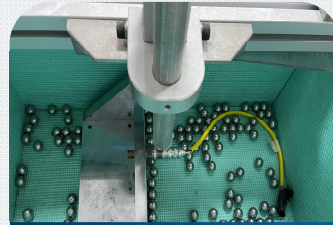
Conduct long-term reliability testing under simulated actual usage conditions to ensure the stability of the sensor in harsh environments



Mechanical Tensile Test



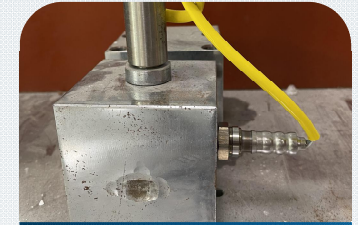
Impact Test



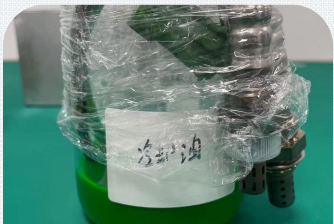
Stone Impact Test



Low-Temperature Test



Swing Test



Chemical Corrosion Resistance Test



Salt Spray Test



Water Spray Test



Fuel Immersion Test



Sine Vibration Test

Quality Control & Certification



Quality Certification Quality is our core competitiveness

- TIANBANG has passed the IATF 16949 Quality Management System certification
- All products strictly comply with E-mark & CE certification standards



PART 3

Product Introduction

Overview of Core Products



Oxygen Sensor

Oxygen sensor detects the residual oxygen content in vehicle exhaust & compare the results with internal reference air. The sensor transmits the data to the Engine Control Unit (ECU), which adjusts fuel injection accordingly to ensure an ideal air-fuel ratio, enhancing fuel efficiency & reducing emissions, helping vehicles meet global emission standards.

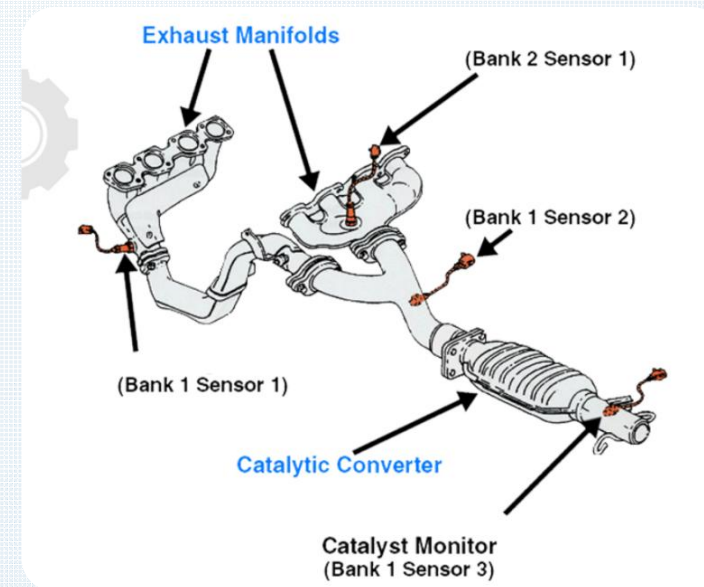
Upstream Oxygen Sensor

Responsible for monitoring the engine's combustion conditions.

Downstream Oxygen Sensor

Used to monitor the emission treatment efficiency of the catalytic converter.

Installation position showing as below :



Overview of Core Products



Automotive Oxygen Sensor

Product Classification

5000+
SKU

100K+
Application

1.5M+
Annual
Production
Capacity



- 1/2/3/4 Wire
- Limit Current Type



- 1/2/3/4 Wire
- ZFAS-U1/U2/U3



- 1/2/3/4 Wire
- LSU4.2/4.9/ADV
- LSU5.1/5.2



- 1/2/3/4 Wire
- OSP+/OPS-B
- Wide b&

Motorcycle oxygen sensor

- M12x1.5
- 1/2/3/4 Wire
- A/F

Overview of Core Products

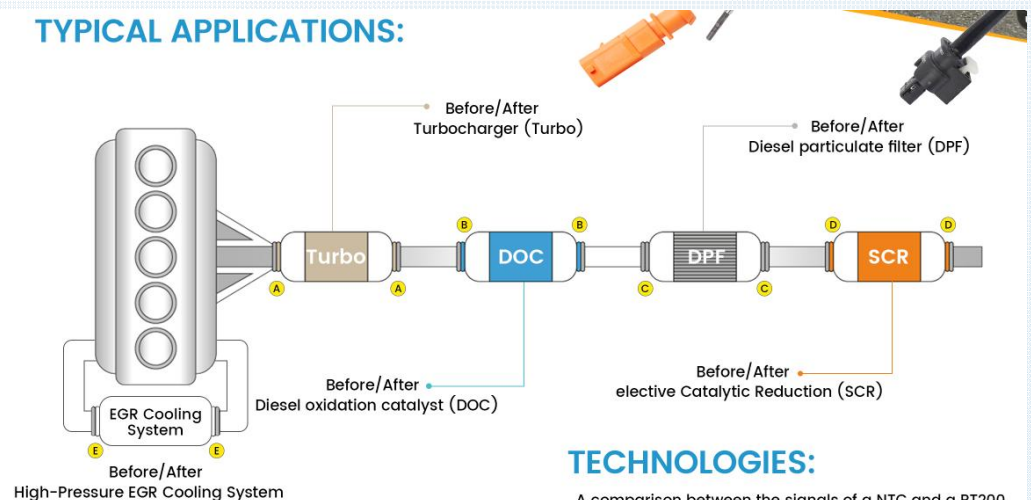


Exhaust temperature sensor (EGT)

EGT Sensor measures the exhaust temperature of the vehicle & converts it into an electrical signal to provide feedback to the ECU, allowing for control of engine conditions & effective reduction of emissions.

Installation position showing as below :

TYPICAL APPLICATIONS:



TECHNOLOGIES:

A comparison between the signals of a NTC and a PT200 EGTs can be seen below. In this example it was used a pull-up resistor of 1000 Ohms and a 5V voltage supply .

Overview of Core Products

Exhaust temperature sensor (EGT)



Product Classification

<div>1000+ SKU</div> <div>20K+ Application</div> <div>300K+ Annual Capacity</div>							
	Operating Temperature	PT200	-40°C~900°C	NTC	-40°C~950°C	Type N thermos couple	-40°C~1150°C
	Measurement Accuracy		±0.1°C		±0.5°C		±1.0°C
	Signal Output		Voltage		Voltage		PWM/SENT
Typical Applications		Exhaust System	Exhaust System	Exhaust Temperature Measurement Before Turbocharger (T3) Oxidation Catalytic Converters Selective Catalytic Reduction (SCR) Catalytic Converters Particulate Filters (Exhaust Gas Recirculation Systems, EGR)			

Overview of Core Products



Nitrogen oxide sensor (NOx)

Nox sensor mainly measures the NOx concentration, air-fuel ratio (A/F ratio), & balanced oxygen partial pressure in the exhaust gases of gasoline & diesel engines.

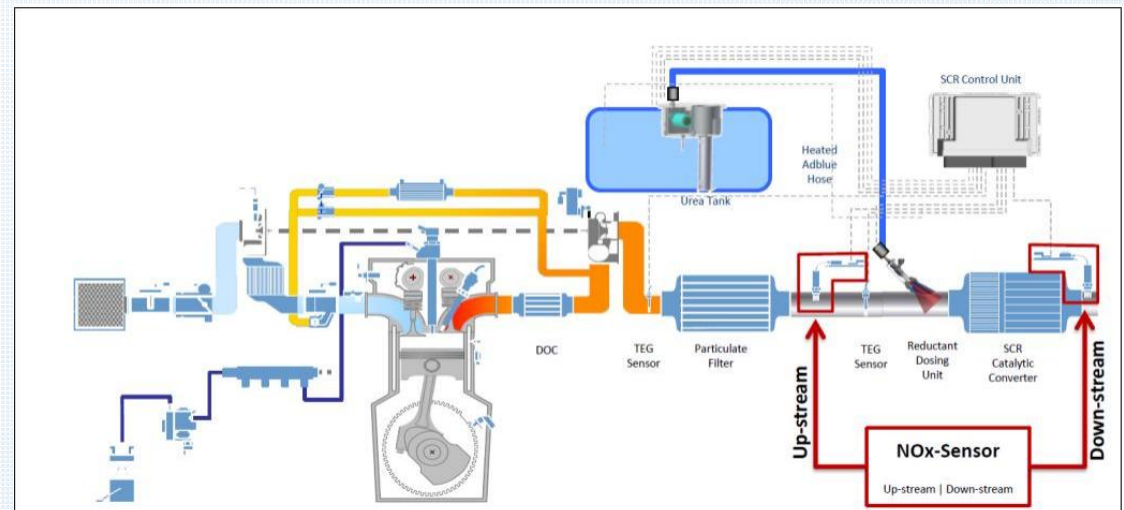
Upstream NOx sensor

Installed in the engine exhaust pipe, it measures the NOx concentration & oxygen concentration in the engine, & feeds back to the ECU to control fuel injection & SCR urea dosing.

Downstream NOx sensor

Installed at the rear of the SCR system, it is used to detect whether the upstream NOx sensor is functioning properly.

Installation position showing as below:



Overview of Core Products



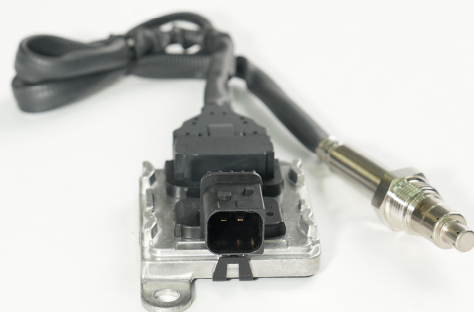
Product Classification

1000+
SKU

20K+
Application

200K+
Annual Capacity

Nitrogen Oxide sensor (NOx)



12V



24V

Vehicle models covered by the product



Motorcycle	Passenger Cars					
Can-Am (BRP)	Chinese	Baojun	BYD	Changan		
Honda		Chery	Dongfeng	GAC Trumpchi		
Polaris		Geely	Great Wall	Hongqi		
Suzuki	Japanese & Korean	Honda	Hyundai	Isuzu	Kia	Lexus
Yamaha		Mitsubishi	Nissan	Subaru	Toyota	Mazda
	European	Audi	BMW	Citroën	Fiat	Jaguar
		L& Rover	Mercedes-Benz	Opel	Peugeot	Porsche
	American	Renault	Volkswagen	Volvo		
		Buick	Cadillac	Chevrolet	Chrysler	Dodge
	Russian	Ford	General Motors	GMC	Jeep	
		GAZ	Lada	UAZ		



产品覆盖车型



Commercial Vehicles

Chinese

DFAC FAW Foton
JAC Sinotruk

Japanese

Fuso Hino Isuzu Nissan

European

DAF IVECO MAN Mercedes-Benz
RENAULT SCANIA VOLVO

American

FREIGHTLINER FORD INTERNATIONAL KENWORTH
MACK PETERBILT STERLING WESTERNSTAR

Russian

KAMAZ MARMON URAL

Industrial&Agricultural Machinery

Case IH Komatsu
Caterpillar Kubota
CLAAS Liebherr
Doosan Infracore Massey Ferguson
Fendt Mitsubishi
John Deere New Holland



PART 4

Service Guarantee

Supply chain management & delivery assurance



Stable supplier network

Establish long-term partnerships with suppliers to ensure the quality & stable supply of raw materials



Smart inventory management

Monitor inventory in real time, maintain safety stock, & ensure production continuity



Flexible production planning

Adjust production based on demand, allocate resources effectively, & ensure on-time delivery



Efficient logistics

Collaborate with multiple logistics companies to offer various transportation options & track shipment status in real time



Customer communication

Update order progress in a timely manner, provide comprehensive after-sales service, & ensure customer satisfaction

Collaboration models & customized procurement solutions



Small-batch production

Support small-batch trial orders to reduce customer investment risk & adapt to changing market dem&s

Customized solutions

Provide flexible product design & specification customization services based on customer needs to meet specific technical requirements

From sample testing to mass production

Provide comprehensive support from sample testing to mass production, ensuring customer satisfaction & meeting market dem&s

Long-term partnership

Establish strategic partnerships to co-develop new products & share market information & technological innovations

Tiered discounts & price locking

Offer tiered discounts based on order volume & lock in prices long-term to help customers control costs & enhance procurement flexibility



Summary




By partnering with us, you will benefit from advanced technology, a stable supply chain, & global support.

We recommend arranging sample testing as soon as possible & discussing long-term collaboration plans. We look forward to working together for mutual success!


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