

Master advanced
technology to improve
automotive components



汽车传感器

AUTOMOTIVE SENSOR

压力传感器
Pressure Sensor

光学传感器
Optical Sensor

加速度 / 偏航率传感器
Accelerator / Yaw Rate Sensor

电流传感器
Current Sensor

速度传感器
Speed Sensor

位置传感器
Position Sensor



让更多人受益于汽车科技的发展

DEVELOP AUTOMOTIVE TECHNOLOGY FOR THE BENEFIT OF MORE PEOPLE

About Baolong Automotive

关于保隆科技



保隆科技于1997年5月在松江创立，于2017年在上海证券交易所上市（股票代码：603197）。公司总部位于上海市松江区，在上海松江、上海浦东、安徽宁国、安徽合肥、湖北武汉和美国、德国、波兰、匈牙利、奥地利等地有生产基地以及研发和销售分支机构，全球员工超过6600人。

保隆科技立足汽车制造业，向汽车智能化与轻量化方向发展。公司产品包括气门嘴、平衡块、智能空气悬架等橡胶金属部件；排气系统管件、汽车结构件和EGR管件等汽车金属管件；汽车胎压监测系统、汽车传感器、基于摄像头和毫米波雷达等技术的汽车驾驶辅助系统等汽车电子产品。

保隆科技是宝马、奔驰、奥迪、大众、丰田、通用、一汽、东风、长安、长城、奇瑞、吉利、比亚迪、蔚来、小鹏、理想、零跑等知名汽车厂的合格供应商。公司以“让更多人受益于汽车科技的发展”为愿景，以“掌握领先技术，提升汽车部件”为使命，在汽车零部件领域作纵深发展。

Shanghai Baolong Automotive Corporation (hereinafter referred to as "Baolong") was founded in 1997, and is listed on Shanghai Stock Exchange (603197.SH). Headquartered in Songjiang District, Shanghai, Baolong has manufacturing sites, R&D and sales centers in China (Songjiang District and Pudong district, Shanghai; Ningguo and Hefei, Anhui Province; Wuhan, Hubei Province), the United States, Germany, Poland, Hungary, Austria, etc., and 6,600 staff around the world.

Baolong has implemented the "Intelligent & Lightweight" strategy to illustrate its continuous innovation in automotive solutions. Its products include rubber & metal parts such as tire valves, wheel weights, ECAS; metal tubing such as exhaust pipes, structural parts and EGR pipes; and automotive electronics featured by TPMS, sensors, and drive assistance systems based on cameras and millimeter-wave radars.

Adhering to the vision of "letting more people benefit from the development of automotive technology", and taking "mastering advanced technology to improve automotive components" as its mission, Baolong is a qualified supplier of BMW, Mercedes Benz, Audi, Volkswagen, Toyota, General Motors, FAW, Dongfeng, Changan, Great Wall, Chery, Geely, BYD, NIO, Xpeng, Ideal, Leapmotor, etc.

Main Customers

主要客户

自主品牌

Chinese Brands



造车新势力

Start-Ups



外资品牌

International Brands



保隆科技与许多世界知名的整车厂和一级供应商合作，他们相信保隆科技致力于汽车产品和解决方案的创新和改变，使得驾乘人员能够获得更安全、更有效率和更舒适的体验。

Baolong cooperates with many world-renowned OEMs and Tier 1 suppliers that trust us to implement the most innovative and game-changing products and solutions to improve safety, efficiency and comfort.

一级供应商

Tier-1 Suppliers



售后客户

Aftermarket



注：以客户英文名称首字母的先后顺序排列 (In alphabetical order of English name)

Global Footprint

全球布局

27 年历史

1997年5月20日，创立于上海松江
Founded in Songjiang,
Shanghai on May 20, 1997

6600+ 人

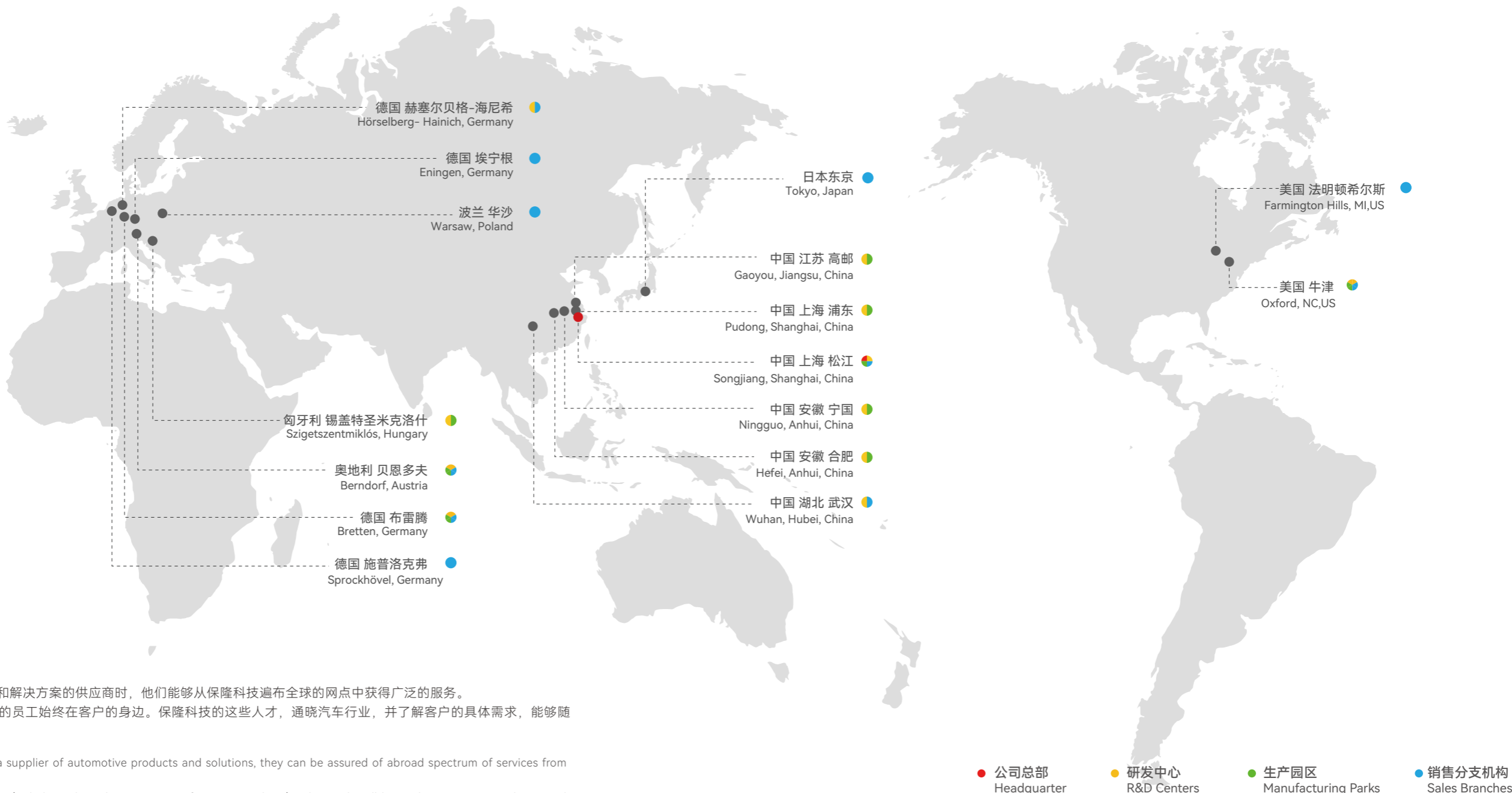
截至2023年12月31日，全球员工总数超过6600人
More than 6600 employees globally,
as of Dec. 31, 2023

9 个生产园区

在中国、北美、欧洲设有9个生产园区
Nine manufacturing parks in China, North
America and Europe

2000+ 个客户

向全球50多个国家和地区的2000多个客户提供产品和服务
Supplies to more than 2,000 customers in over 50
countries and regions



当客户选择保隆科技作为汽车产品和解决方案的供应商时，他们能够从保隆科技遍布全球的网点中获得广泛的服务。在全球范围内，我们保隆科技敬业的员工始终在客户的身边。保隆科技的这些人才，通晓汽车行业，并了解客户的具体需求，能够随时为客户提供各种支持。

When customers choose Baolong as a supplier of automotive products and solutions, they can be assured of abroad spectrum of services from Baolong's global network. Globally present, the access to Baolong's dedicated employees is never far away. Baolong's talents who all know the automotive industry and understand customers' specific demands and needs are always ready to support customers.

Milestones

发展历程

1997

公司成立
Baolong founded



1998

研制轮胎气门嘴
Developed tire valves



1999

总部园区成立
Songjiang (China) factory opened



2000

研制车轮平衡块
Developed wheel weights



2001

研制排气系统管件
Developed exhaust pipes



2002

研制TPMS
Developed TPMS



2005

收购美国DILL公司
Acquired Dill Air Controls Products, LLC



2006

宁国园区成立
Ningguo (China) factory opened



2009

研制汽车压力传感器
Developed pressure sensors



2012

研制汽车结构件、光学传感器、空气弹簧
Developed structural parts, optical sensors, and air springs



2013

研制视觉系统、毫米波雷达
Developed cameras and millimeter-wave radars



2014

武汉园区成立
Set up R&D center in Wuhan, China



2016

研制电控减振器
Developed air spring dampers



2017

上海证券交易所上市
IPO on Shanghai Stock Exchange

2018

合肥园区成立
收购德国PEX和TESONA
研制ECAS
Hefei (China) factory founded
Acquired PEX/TESONA
Developed ECAS



2019

保富电子正式运营
保隆沙士基达成立
收购奥地利MMS
BH SENS established
BSHF founded
Acquired MMS, Austria

2020

与领目科技合资
武汉园区新办公楼启用
量产双目视觉系统
JV with Leadmove
Wuhan R&D building opened
Mass produced stereo cameras

2021

SAP 上线
空气悬架新品量产
合肥园区启用
Introduced ERP system from SAP
Batch production of air suspension
Hefei (China) factory opened

2022

收购龙感科技;
与苏州优达斯合资;
与元橡科技合资;
全铝空悬储气罐量产下线;
成立迈艾斯上海

Acquired Longgan
JV with UDAS
JV with METOAK
Mass produced all-aluminum
air tanks for air suspension
MMS (Shanghai) founded

2023

欧洲研发制造中心正式开园
安徽宁国两个新厂区启用&项目投产
悬架控制器在合肥园区量产下线

European R&D and manufacturing center opened in Hungary
Two new factories in Ningguo opened and started production
Mass produced air suspension controllers in Hefei factory



Enterprise Honors 企业荣誉

资质证书 / Certifications



保隆科技
ISO 26262功能安全管理体系认证证书
ISO 26262 Baolong Automotive



保隆汽车电子实验室
CNAS认证
CNAS L12065 Baolong Automotive



保隆安徽拓扑思汽车零部件有限公司
IATF 16949 质量体系认证
IATF 16949 Ningguo Branch



保隆安徽汽车配件有限公司
ISO 14001环境管理体系认证
ISO 14001 Ningguo Branch



保隆科技
ISO 14001环境管理体系认证
ISO 14001 Baolong Automotive



保隆安徽拓扑思汽车零部件有限公司
ISO 14001环境管理体系认证
ISO 14001 Ningguo Branch



保隆科技
IATF 16949质量体系认证
IATF 16949 Baolong Automotive

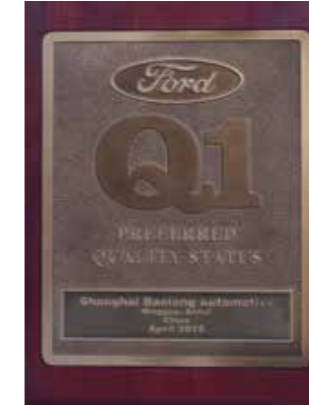


安徽拓扑思汽车零部件有限公司
职业健康安全管理体系认证证书
ISO 45001 Ningguo Branch



保隆科技
汽车能源管理证书
Energy Management System Certificate

客户认可 / Customer Awards



福特Q1质量体系认证证书
Ford Q1 Preferred Quality Status



伍尔特A级供应商
Wurth Grade "A" Supplier



理想精神奖
Li Auto Spirit Award



通用汽车供应商质量卓越奖
GM Supplier Quality Excellence Award



大众A级供应商
Volkswagen Grade "A" Supplier

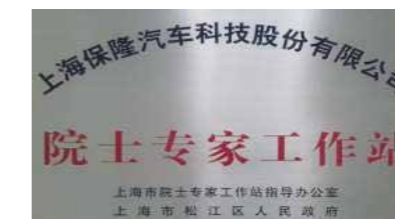


佛吉亚全球供应商
Faurecia Global Supplier

政府荣誉 / Government Awards



国家认定企业技术中心
National-recognized Enterprise Technology Center



院士专家工作站
Academician Expert Workstation



国家级知识产权优势企业
National Intellectual Property Advantage Enterprise

Test Capability

实验能力

电气类试验主要能力 Electrical Test Capability

电压复位试验	Voltage Reset Test
瞬时过电压试验	Transient Overpressure Test
电压瞬断实验	Voltage Dips and Interruptions
电压下降与上升	Voltage Drop and Increase Test
负载跌落	Load Drop Test
脉冲电压测试	Impulse Voltage Test
反向电压试验	Reversed Voltage Test
叠加交流电试验	AC Superimposed Test
绝缘电阻试验	Insulation Resistance Test
短路测试	Short Circuit Test
开路测试	Open Circuit Test

环境性能试验主要能力 Environment Test Capability

高温耐久性试验	High Temperature Durability Test
高低温湿热试验	Climate and Humidity Test
温度冲击试验	Thermal Shock
高低温湿复合旋转装置试验台	Climate, Humidity and Rotation Combined Test
低温存储试验	Low Temperature Storage Test
温度循环试验	Temperature Cycle
阶梯温度试验	Stepped Temperature Test
稳态湿热试验	Constant Climate and Humidity Test

光雨量测试主要能力 RLS Special Test Capability

光谱范围为730-1100nm, 430-610nm	Spectrum: 730-1100nm, 430-610nm
雨量: 可模拟小雨、中雨、大雨	Rain Simulation: Thin Rain, Moderate Rain, Heavy Rain.

防护及腐蚀性能试验主要能力 Chemical and Corrosion Test Capability

防水试验	Water Proof Test
外壳尘防护试验	Dust Proof Test
循环盐雾试验	Salt Fog Cycle
介质兼容试验	Medium Compatibility Test
化学腐蚀试验	Chemical Corrosion Resistance
冰水冲击试验	Ice Water Shock Test
碎石冲击试验	Stone Chip

压力传感器专项测试能力 Pressure Sensor Special Test Capability

气压 (加高低温) 脉冲试验	Pulse Pressure Test (combined with climate change)
液压 (加高低温) 脉冲试验	Hydraulic Impulse Test (combined with climate change)
压力循环测试	Press Cycle Endurance
爆压测试	Burst Pressure

机械环境性能试验主要能力 Mechanical Test Capability

高低温-湿度-振动综合试验	Climate, Humidity and Vibration Combined Test
机械冲击试验	Mechanical Shock
拉压力机械破坏性试验	Tensile Destructive Test
共振扫频试验	Resonant Sweep Test
自由跌落试验	Free Drop Test
线束耐久试验	Wire Harness Durability Test

EMC类试验主要能力 EMC Capability

BCI
RE
CE
ESD



光雨量测试台架
RLS Test Bench



高低温复合旋转台
Climate Combined Rotation Test Bench



传感器液压疲劳测控系统
Sensor Liquid Pressure Fatigue Test System



旋转式高低温湿箱
Rotatory Climate and Humidity Chamber



高低温湿箱
Climate and Humidity Chamber



干燥箱
Drying Oven



EMS 测试室
EMS Lab



BCI测试系统
BCI Test System



拉压力计
Tension Pressure Gauge



防水试验台
Water Proof Test Rig



灰尘试验箱
Dust Chamber

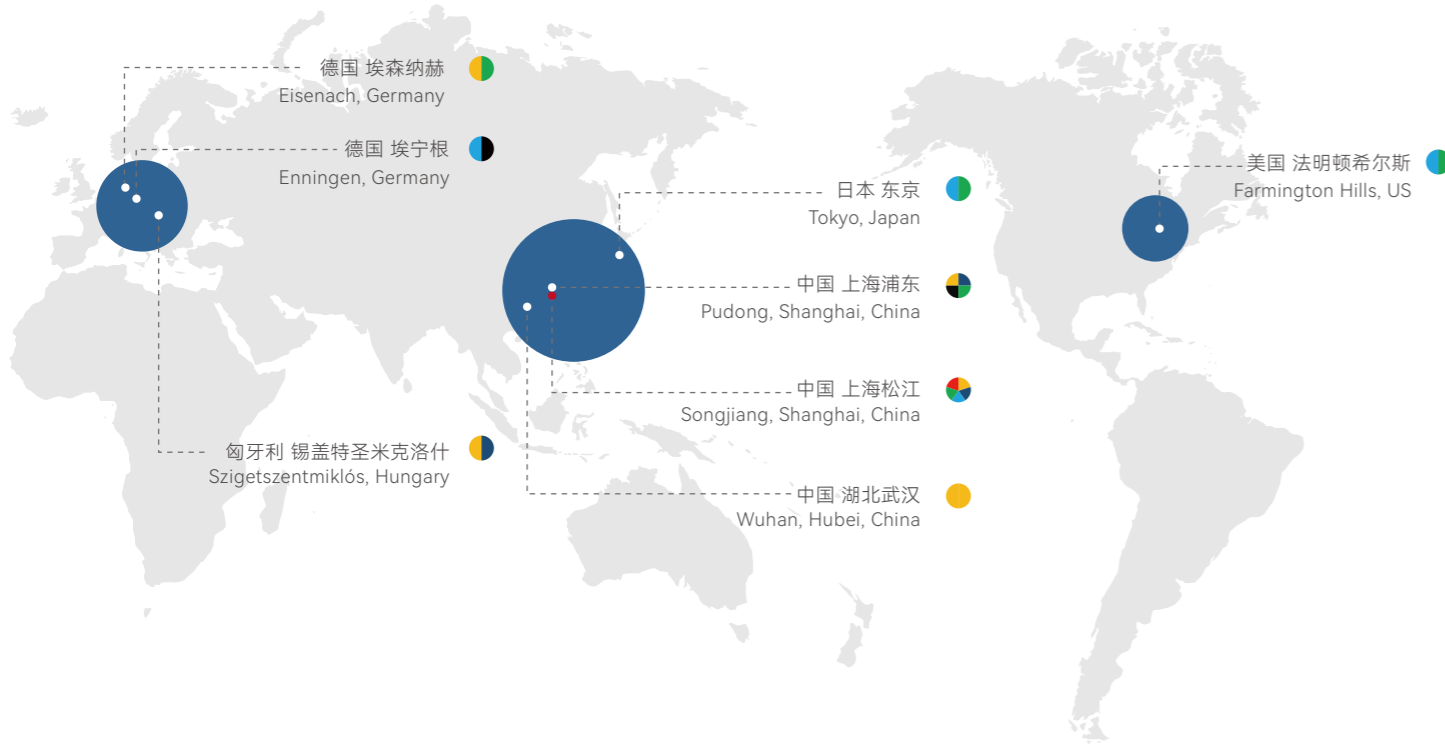


高低温复合振动台
Climate Combined Vibration Test Bench

GLOBAL FOOTPRINT OF AUTOMOTIVE SENSORS

汽车传感器全球布局

● 总部 ● 研发 ● 生产 ● 销售 ● 客户服务 ● 项目管理



- 专注于汽车传感器的研发、生产和销售。
- 上海松江工厂负责压力温度类、光雨量类、电流类、加速度类传感器。
- 上海浦东工厂负责速度类、位置类传感器。
- 匈牙利工厂负责刹车磨损传感器、新能源母排、线束。

Baolong is at the forefront of R&D, manufacturing, and sales of automotive sensors. The factory in Songjiang, Shanghai is dedicated to pressure temperature sensors, rain & light sensors, current sensors, and accelerator sensors. The factory in Pudong, Shanghai is dedicated to speed and position sensors. The factory in Hungary is dedicated to brake wear indicators, busbars (for new energy vehicles) and wiring harnesses.

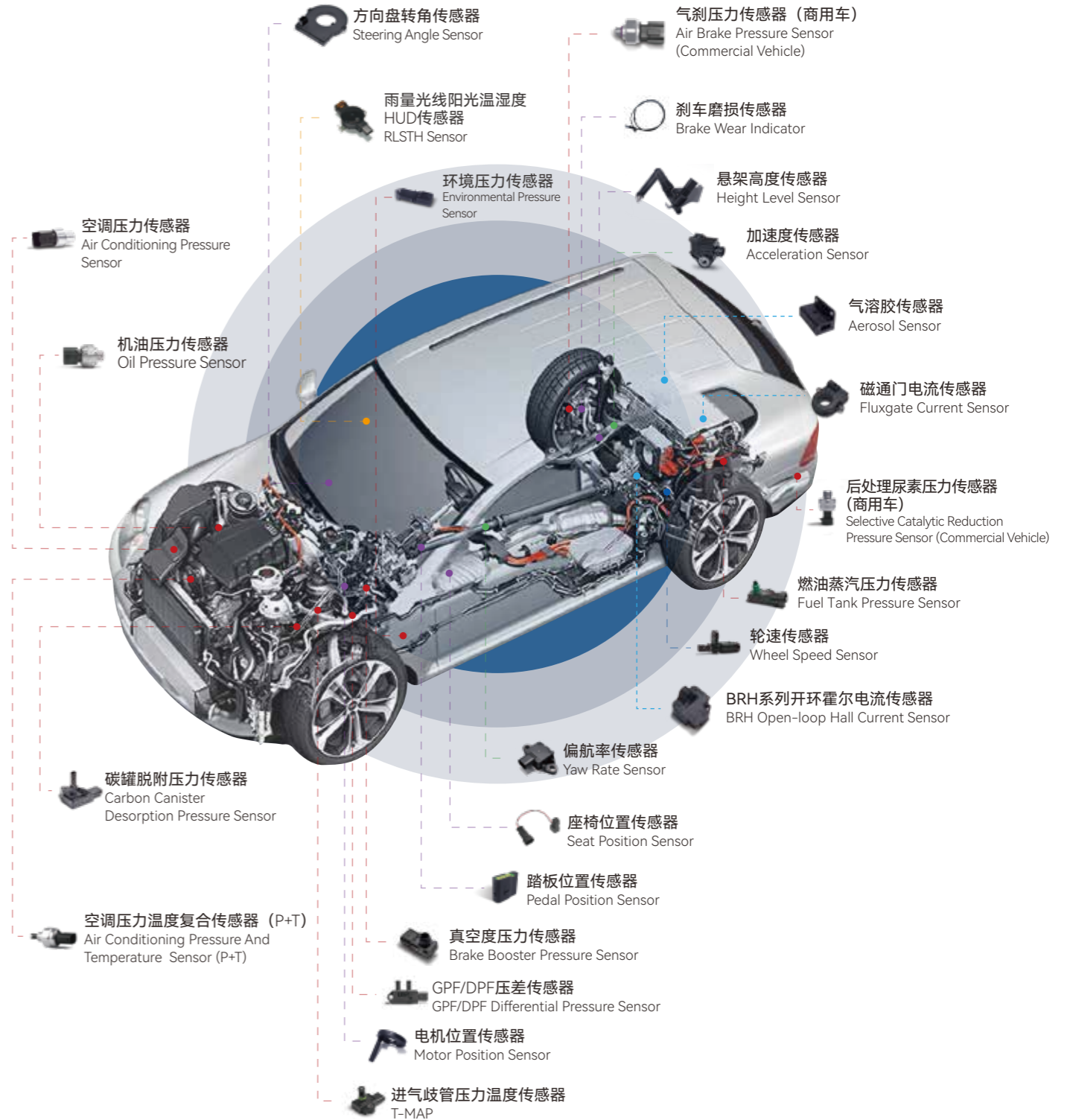
国六标准
CHINA VI
EMISSION STANDARD

节能环保
Energy Conservation &
Environmental Protection

多重验证
Multiple Inspection

精度高、响应快
High Precision &
Fast Response

● 光学传感器 Optical Sensors
 ● 压力传感器 Pressure Sensors
 ● 速度传感器 Speed Sensors
 ● 位置类传感器 Position Sensors
 ● 加速度/偏航率传感器 Accelerator / Yaw Rate Sensors
 ● 电流传感器 Current Sensors



AUTOMOTIVE SENSOR

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► 进气歧管压力温度传感器

| 应用

进气歧管压力温度传感器用于发动机电控系统。此传感器根据发动机的负荷状态时时测量进气歧管内的绝对压力和温度，并转换成电信号输送到电控单元（ECU），作为确定喷油器喷油量的依据。



特性

- MEMS传感技术
- 高性能，优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度，行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围，输出曲线以及外形尺寸定制化设计
- 卓越的耐振性设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小，安装简单，小型紧凑型
- 低成本的OEM应用设计

| 参数

压力范围（可定制）	10~115kPaA/20~300kPaA/50~400kPaA等		
输出电压（可定制）	0.4~4.65V 0.5~4.5V等		
精度（可调整）	±1.0%FS: 10°C~85°C	±1.5%FS: -40°C~130°C	
工作温度	-40°C~130°C		
存储温度	-40°C~150°C		
供电电压	4.75~5.25VDC	爆压（压力）	3*P max
输出负载（容性）	100nF ~ 470nF	过电压	18VDC
输出负载（阻性）	Min 4.7KΩ	反向电压	-14VDC
短路保护	有	循环实验	200万次
供电电流	≤10mA	外壳材料	PBT+30%GF
过压（压力）	2*P max	防护等级	IP69

▶ T-MAP

| APPLICATION

The intake manifold Pressure Sensor is used in the engine electronic control system. It measures the change of the absolute pressure (vacuum degree) in the intake manifold and the temperature change according to the load state of the engine, and converts it into a voltage signal and a resistance signal, and transmit it to the electronic control unit together with the speed signal (ECU), as the basis for determining the basic fuel injection amount of the injector.



FEATURE

- MEMS sensing technique
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-Cost OEM application design

| PARAMETER

Pressure Range (Customizable)	10~115kPaA/20~300kPaA/50~400kPaA	
Output Voltage (Customizable)	0.4~4.65V 0.5~4.5V	
Accuracy (Adjustable)	±1.0%FS: 10°C~85°C	±1.5%FS: -40°C~130°C
Operating Temperature	-40°C~130°C	
Storage Temperature	-40°C~150°C	
Supply Voltage	4.75~5.25VDC	Burst Pressure 3*P max
Output Load (Capacitive)	100nF~470nF	Overvoltage 18VDC
Output Load (Resistive)	Min 4.7KΩ	Reverse Voltage -14VDC
Short-circuit Protection	Yes	Cyclic Test 2,000,000 times
Supply Current	≤10mA	Housing Material PBT+30%GF
Proof (Pressure)	2*P max	Protection Level IP69

► 机油压力传感器

| 应用

产品安装在发动机上，检测发动机机油的压力，压力传感器把检测到的压力转化为电信号输入到车辆的控制系统。



特性

- MEMS传感技术
- 高性能, 优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度, 行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐振性设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小, 安装简单, 小型紧凑型
- 低成本的OEM应用设计

| 参数

压力范围 (可定制)	0~1000kPaA等		
输出电压 (可定制)	0.4~4.65V or 0.5~4.5V等		
精度 (可调整)	±2.0%FS: 10°C~100°C	±3%FS: -40°C~150°C	
工作温度	-40°C~150°C		
存储温度	-40°C~150°C		
供电电压	4.75~5.25VDC	爆压 (压力)	3*P max
输出负载 (容性)	100nF ~ 470nF	过电压	18VDC
输出负载 (阻性)	Min 4.7KΩ	反向电压	-14VDC
短路保护	有	循环实验	200万次
供电电流	≤10mA	外壳材料	铝合金/钢等
过压 (压力)	2*P max	防护等级	IP69

► OIL PRESSURE SENSOR

| APPLICATION

The product is mounted on the engine to detect the pressure of the engine oil, and the pressure sensor converts the detected pressure into electrical signal then input to the vehicle's control system.

Engine oil has cooling, lubrication, cleaning and sealing functions, which play a vital role in ensuring the normal operation of the engine. As engine operating time increases, engine oil is contaminated by high temperature oxidation, mechanical parts wear, fuel vapor corrosion and other factors.



FEATURE

- MEMS sensing technique
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

| PARAMETER

Pressure Range (Customizable)	0~1000kPaA	
Output Voltage (Customizable)	0.4~4.65V or 0.5~4.5V	
Accuracy (Adjustable)	±2.0%FS: 10°C~100°C	±3%FS: -40°C~150°C
Operating Temperature	-40°C~150°C	
Storage Temperature	-40°C~150°C	
Supply Voltage	4.75~5.25VDC	Burst Pressure 3*P max
Output Load (Capacitive)	100nF~470nF	Overvoltage 18VDC
Output Load (Resistive)	Min 4.7KΩ	Reverse Voltage -14VDC
Short-Circuit Protection	Yes	Cyclic Test 2,000,000 times
Supply Current	≤10mA	Housing Material aluminum/steel
Proof (Pressure)	2*P max	Protection Level IP69

► 空调压力传感器

| 应用

产品安装在空调系统的管路上或冷凝器上，检测空调系统制冷剂的压力，压力传感器把检测到的压力转化为电信号输入到车辆的控制系统。

特性

- MEMS传感技术
- 高性能, 优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度, 行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐振性设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小, 安装简单, 小型紧凑型
- 低成本的OEM应用设计



压力传感器

| 参数

压力范围 (可定制)	0~3400KPaG/0~3200kPaG等		
输出电压 (可定制)	0.4~4.65V or 0.5~4.5V等		
精度 (可调整)	±2.0%FS: 10°C~85°C	±3%FS: -40°C~125°C	
工作温度	-40°C~125°C		
存储温度	-40°C~130°C		
供电电压	4.75~5.25VDC	爆压 (压力)	3*P max
输出负载 (容性)	100nF ~ 470nF	过电压	18VDC
输出负载 (阻性)	Min 4.7KΩ	反向电压	-14VDC
短路保护	有	循环实验	200万次
供电电流	≤10mA	外壳材料	铝合金/铜/钢等
过压 (压力)	2*P max	防护等级	IP67

► AIR CONDITIONING PRESSURE SENSOR

| APPLICATION

The product is installed on the pipeline of the air conditioning system or on the condenser to detect the pressure of the refrigerant in the air conditioning system, and the pressure sensor converts the detected pressure into an electrical signal and output it to the control system of the vehicle.



FEATURE

- MEMS sensing technique
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

| PARAMETER

Pressure Range (Customizable)	0~3400kPaG/0~3200kPaG	
Output Voltage (Customizable)	0.4~4.65V or 0.5~4.5V	
Accuracy (Adjustable)	±2.0%FS: 10°C~85°C	±3%FS: -40°C~125°C
Operating Temperature	-40°C~125°C	
Storage Temperature	-40°C~130°C	
Supply Voltage	4.75~5.25VDC	Burst Pressure 3*P max
Output Load (Capacitive)	100nF~470nF	Overvoltage 18VDC
Output Load (Resistive)	Min 4.7KΩ	Reverse Voltage -14VDC
Short-circuit Protection	Yes	Cyclic Test 2,000,000 times
Supply Current	≤10mA	Housing Material aluminum/copper/steel
Proof (Pressure)	2*P max	Protection Level IP67

► 碳罐脱附压力传感器（国六排放要求）

| 应用

碳罐脱附压力传感器安装在燃油蒸汽吸附脱附装置（俗称“碳罐”）上，检测碳罐系统上的绝对压力。碳罐脱附压力传感器把检测到的压力转化为电信号输入到车辆的控制系统，作为燃油蒸发控制系统中对泄漏量进行检测和车载诊断OBD要求的依据。



特性

- MEMS传感技术
- 高性能, 优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度, 行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐振性设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小, 安装简单。小型紧凑型
- 低成本的OEM应用设计

| 参数

压力范围（可定制）	10~115kPaA等		
输出电压（可定制）	0.4~4.65V or 0.5~4.5V等		
精度（可调整）	±1.0%FS: 10°C~85°C; ±1.5%FS: -40°C~125°C		
工作温度	-40°C~130°C		
存储温度	-40°C~130°C		
供电电压	4.75~5.25VDC	爆压（压力）	3*P max
输出负载（容性）	Max 470nF	过电压	18VDC
输出负载（阻性）	Min 4.7KΩ	反向电压	-14VDC
短路保护	有	循环实验	200万次
供电电流	≤10mA	外壳材料	PBT+30%GF
过压（压力）	2*P max	防护等级	IP69

▶ CARBON CANISTER DESORPTION PRESSURE SENSOR (NATIONAL VI EMISSION REQUIREMENTS)

| APPLICATION

The canister desorption pressure sensor is mounted on a fuel vapor adsorption and desorption device (commonly known as a “canister”) to detect the absolute pressure on the canister system. The canister desorption pressure sensor converts the detected pressure into an electrical signal and output it to the vehicle’s control system as a basis for the detection of the leakage amount and the on-board diagnostic OBD requirement in the fuel evaporation control system.



FEATURE

- MEMS sensing technique
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

| PARAMETER

Pressure Range (Customizable)	10~115kPaA		
Output Voltage (Customizable)	0.4~4.65V or 0.5~4.5V		
Accuracy (Adjustable)	±1.0%FS: 10°C~85°C; ±1.5%FS: -40°C~125°C		
Operating Temperature	-40°C~130°C		
Storage Temperature	-40°C~130°C		
Supply Voltage	4.75~5.25VDC	Burst Pressure	3*P max
Output Load (Capacitive)	Max 470nF	Overtoltage	18VDC
Output Load (Resistive)	Min 4.7KΩ	Reverse Voltage	-14VDC
Short-circuit Protection	Yes	Cyclic Test	2,000,000 times
Supply Current	≤10mA	Housing Material	PBT+30%GF
Proof (Pressure)	2*P max	Protection Level	IP69

► 燃油蒸发泄漏压力传感器（国六排放要求）

| 应用

产品安装在油箱的油泵上或油路的管路上，检测燃油管路系统上的相对压力。燃油蒸发泄漏压力传感器把检测到的压力转化为电信号输入到车辆的控制系统，作为燃油蒸发控制系统中对泄漏量进行检测和车载诊断的依据。



特性

- MEMS传感技术
- 高性能, 优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度, 行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐振性设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小, 安装简单, 小型紧凑型
- 低成本的OEM应用设计

| 参数

压力范围 (可定制)	-3.75~+1.25kPaD/-3.75~+3.5kPaD/-20~+40kPaD等		
输出电压 (可定制)	0.4~4.65V or 0.5~4.5V等		
精度 (可调整)	±2.0%FS: 10°C~85°C; ±3%FS: -40°C~115°C		
工作温度	-40°C~115°C		
存储温度	-40°C~115°C		
供电电压	4.75~5.25VDC	爆压 (压力)	3*P max
输出负载 (容性)	100nF ~ 470nF	过电压	18VDC
输出负载 (阻性)	Min 4.7KΩ	反向电压	-14VDC
短路保护	有	循环实验	200万次
供电电流	≤10mA	外壳材料	PA6/6T-GF35
过压 (压力)	2*P max	防护等级	IP69

▶ FUEL TANK PRESSURE SENSOR (NATIONAL VI EMISSION REQUIREMENTS)

| APPLICATION

The product is installed on the oil pump of the fuel tank or on the pipeline of the oil circuit to detect the relative pressure on the fuel pipeline system, The fuel evaporative leakage pressure sensor converts the detected pressure into an electric signal and input it to the vehicle's control system, and this electrical signal is served as a basis for detecting the leakage amount and on-board diagnosis in the fuel evaporation control.



FEATURE

- MEMS sensing technique
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

| PARAMETER

Pressure Range (Customizable)	-3.75~+1.25kPaD/-3.75~+3.5kPaD/-20~+40kPaD	
Output Voltage (Customizable)	0.4~4.65V or 0.5~4.5V	
Accuracy (Adjustable)	±2.0%FS: 10°C~85°C; ±3%FS: -40°C~115°C	
Operating Temperature	-40°C~115°C	
Storage Temperature	-40°C~115°C	
Supply Voltage	4.75~5.25VDC	Burst Pressure 3*P max
Output Load (Capacitive)	100nF~470nF	Overvoltage 18VDC
Output Load (Resistive)	Min 4.7KΩ	Reverse Voltage -14VDC
Short-Circuit Protection	Yes	Cyclic Test 2,000,000 times
Supply Current	≤10mA	Housing Material PA6/6T-GF35
Proof (Pressure)	2*P max	Protection Level IP69

► GPF/DPF压差传感器（国六排放要求）

| 应用

GPF差压传感器安装在颗粒过滤器的两端。车辆电控系统通过传感器采集GPF上游和下游的相关压力值（差压，相对压力，绝对压力或几种组合信号）来判断GPF是否堵塞或者出现管路脱落等异常，以此来进行GPF再生的操作和故障诊断。



特性

- MEMS传感技术
- 高性能, 优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度, 行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐振性设计
- 高度模块化产品配置
- 出色的耐尾气腐蚀性性能
- 体积小, 安装简单, 小型紧凑型
- 低成本的OEM应用设计

| 参数

压力范围（可定制）	-20~80kPaD/50~220kPaA/-14.5~+50kPaD等		
输出电压（可定制）	0.4~4.65V or 0.5~4.5V或SNET输出等		
精度（其中一种）	±0.8kPa（-14.3~50kPaD/±1.2kPa（-14.3~25kPaG）	温度系数：1.5（-40~-10°C & 100~140°C）	
工作温度	-40°C~140°C		
存储温度	-40°C~150°C		
供电电压	4.75~5.25VDC		
输出负载（容性）	100nF ~ 470nF		
输出负载（阻性）	Min 4.7KΩ		
短路保护	有		
供电电流	≤15mA/≤30mA(根据不同类型而定)		
过压（压力）	2*P max		
		爆压（压力）	3*P max
		过电压	18VDC
		反向电压	-14VDC
		循环实验	200万次
		外壳材料	PPS+30%GF
		防护等级	IP69

▶ GPF/DPF DIFFERENTIAL PRESSURE SENSOR (NATIONAL VI EMISSION REQUIREMENTS)

| APPLICATION

The GPF differential pressure sensor is installed at both ends of the particulate filter to detect the differential pressure at both ends of the particulate filter or to detect the absolute pressure at both ends of the particulate filter. The GPF differential pressure sensor converts the detected pressure into an electrical signal and input it to the vehicle's control system as a basis for the system to detect leakage and on-board diagnostics.



FEATURE

- MEMS sensing technique
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

| PARAMETER

Pressure Range (Customizable)	-20~80kPaD/50~220kPaA/-14.5~+50kPaD		
Output Voltage (Customizable)	0.4~4.65V/0.5~4.5V/SNET Output		
Accuracy (Adjustable)	±0.8KPa (-14.3~50KPaD) / ±1.2KPa (-14.3~25KPaG) / TC: 1.5 (-40~-10 °C & 100~140 °C)		
Operating Temperature	-40°C~140°C		
Storage Temperature	-40°C~C150°C		
Supply Voltage	4.75~5.25VDC	Burst Pressure	3*P max
Output Load (Capacitive)	100nF~470nF	Overvoltage	18VDC
Output Load (Resistive)	Min 4.7KΩ	Reverse Voltage	-14VDC
Short-Circuit Protection	Yes	Cyclic Test	2,000,000 times
Supply Current	≤15mA/≤30mA	Housing Material	PPS+30%GF
Proof (Pressure)	2*P max	Protection Level	IP69

► 空调压力温度复合传感器 (P+T)

| 应用

产品安装在空调管路上，用于测量管路中的介质压力和温度情况，传感器把检测到的压力和温度数据转化为电信号输入到车辆的控制系统。



特性

- 陶瓷电容传感技术
- 高性能, 优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度, 行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐机械性能设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小, 安装简单, 小型紧凑型
- 低成本的OEM应用设计
- 高精度的温度输出功能

| 参数

压力范围 (可定制)	0~11BarG/0~36BarG等	爆压 (压力)	3*P max
输出电压 (可定制)	0.4~4.65V or 0.5~4.5V等	过电压	28VDC
精度 (可调整)	±1.8%Vcc: -5°C~115°C; ±2.8%Vcc: -40°C or 135°C	反向电压	-24VDC
工作温度	-40°C~135°C	循环实验	200万次
存储温度	-40°C~135°C	外壳材料	铝合金/不锈钢
供电电压	4.75~5.25VDC	防护等级	IP69
输出负载 (容性)	Max 470nF		
输出负载 (阻性)	Min 4.7KΩ		
短路保护	有		
供电电流	≤5mA		
过压 (压力)	2*P max		

► AIR CONDITIONING PRESSURE AND TEMPERATURE SENSOR (P+T)

| APPLICATION

The product is installed in the air conditioning pipeline, used to measure the medium pressure and temperature in the pipeline, the sensor detects the pressure and temperature data into an electrical signal input to the vehicle control system.



FEATURE

- Ceramic capacitive sensing technology
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design
- High precision temperature output function

| PARAMETER

Pressure Range (Customizable)	0~11BarG/0~36BarG		
Output Voltage (Customizable)	0.4~4.65V or 0.5~4.5V		
Accuracy (Adjustable)	±1.8%Vcc: -5°C~115°C; ±2.8%Vcc: -40°C or 135°C		
Operating Temperature	-40°C~135°C		
Storage Temperature	-40°C~135°C		
Supply Voltage	4.75~5.25VDC	Burst Pressure	3*P max
Output Load (Capacitive)	Max 470nF	Overvoltage	28VDC
Output Load (Resistive)	Min 4.7KΩ	Reverse Voltage	-24VDC
Short-Circuit Protection	Yes	Cyclic Test	2,000,000 times
Supply Current	≤5mA	Housing Material	aluminum/stainless steel
Proof (Pressure)	2*P max	Protection Level	IP69

► 真空度压力传感器

| 应用

真空度压力传感器安装在制动真空管路系统上，用于监测当前制动真空管路上的真空度，反馈当前制动助力大小。压力传感器把检测到的压力转化为电信号输入到车辆的控制系统。



特性

- MEMS传感技术
- 高性能, 优异的长期稳定性和性能
- 零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度, 行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐振性设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小, 安装简单, 小型紧凑型
- 低成本的OEM应用设计

| 参数

压力范围 (可定制)	-100~0kPa等		
输出电压 (可定制)	0.4~4.65V/0.5~4.5V等		
精度	±1.6%FS: 0°C~100°C ±2.4%FS: -40°C~130°C;		
工作温度	-40°C~130°C		
存储温度	-40°C~130°C		
供电电压	4.75~5.25VDC	爆压 (压力)	3*P max
输出负载 (容性)	2.2nF ~ 470nF	过电压	18VDC
输出负载 (阻性)	≥4.7KΩ	反向电压	-14VDC
短路保护	有	循环寿命	200万次
供电电流	≤10mA	外壳材料	PBT+30%GF
过压 (压力)	2*P max	防护等级	IP69

► BRAKE BOOSTER PRESSURE SENSOR

| APPLICATION

The Brake booster pressure sensor is installed on the brake vacuum line to monitor the air pressure on the current brake vacuum line, reflect the degree of vacuum, and indirectly feedback the current brake boost.



FEATURE

- MEMS sensing technique
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

| PARAMETER

Pressure Range (Customizable)	-100~0kPa		
Output Voltage (Customizable)	0.4~4.65V/0.5~4.5V		
Accuracy (Adjustable)	±1.6%FS: 0°C~100°C; ±2.4%FS: -40°C~130°C		
Operating Temperature	-40°C~130°C		
Storage Temperature	-40°C~130°C		
Supply Voltage	4.75~5.25VDC	Burst Pressure	3*P max
Output Load (Capacitive)	2.2nF~470nF	Overvoltage	18VDC
Output Load (Resistive)	≥4.7KΩ	Reverse Voltage	-14VDC
Short-Circuit Protection	Yes	Cyclic Test	2,000,000 times
Supply Current	≤10mA	Housing Material	PBT+30%GF
Proof (Pressure)	2*P max	Protection Level	IP69

► 气刹压力传感器（商用车）

| 应用

产品安装在商用车刹车系统的储气罐上，检测储气罐的压力，压力传感器把检测到的压力转化为电信号输入到车辆的控制系统。

特性

- MEMS传感技术
- 高性能, 优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度, 行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐振性设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小, 安装简单, 小型紧凑型
- 低成本的OEM应用设计

压力传感器



| 参数

压力范围（可定制）	0~1.143MPa/0~1.4MPa等		
输出电压（可定制）	0.4~4.65V/0.5~4.5V等		
精度（可调整）	±2.5%FS: -40°C~85°C		
工作温度	-40°C~85°C		
存储温度	-40°C~125°C		
供电电压	4.75~5.25VDC	爆压（压力）	3*P max
输出负载（容性）	Max 470nF	过电压	32VDC
输出负载（阻性）	Min 4.7KΩ	反向电压	-28VDC
短路保护	有	循环寿命	50万次
供电电流	≤10mA	外壳材料	不锈钢, 钢
过压（压力）	2*P max	防护等级	IP69

► AIR BRAKE PRESSURE SENSOR (COMMERCIAL VEHICLE)

| APPLICATION

The product is installed on the air tank of brake system for commercial vehicle. The pressure sensor converts the detected pressure into electrical signal then input to the vehicle's control system.



FEATURE

- MEMS sensing technique
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

| PARAMETER

Pressure Range (Customizable)	0~1.143MPa/0~1.4MPa		
Output Voltage (Customizable)	0.4~4.65V/0.5~4.5V		
Accuracy (Adjustable)	±2.5%FS: -40°C~85°C		
Operating Temperature	-40°C~85°C		
Storage Temperature	-40°C~125°C		
Supply Voltage	4.75~5.25VDC	Burst Pressure	3*P max
Output Load (Capacitive)	Max 470nF	Overvoltage	32VDC
Output Load (Resistive)	Min 4.7KΩ	Reverse Voltage	-28VDC
Short-Circuit Protection	Yes	Cyclic Test	500,000 times
Supply Current	≤10mA	Housing Material	stainless steel/steel
Proof (Pressure)	2*P max	Protection Level	IP69

► 后处理尿素压力传感器（商用车）

| 应用

产品安装在SCR后处理系统上，检测后处理系统尿素罐的压力，压力传感器把检测到的压力转化为电信号输入到车辆的控制系统。



特性

- 陶瓷电容传感技术
- 高性能, 优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度, 行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐机械性能设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小, 安装简单, 小型紧凑型
- 低成本的OEM应用设计

| 参数

压力范围（可定制）	0.101~1.301MPaA等	爆压（压力）	3*P max
输出电压（可定制）	0.4~4.65V/0.5~4.5V等	过电压	28VDC
精度	±3%Vcc: -11°C~85°C	反向电压	-24VDC
工作温度	-40°C~85°C	循环实验	200万次
存储温度	-40°C~125°C	外壳材料	不锈钢
供电电压	4.75~5.25VDC	防护等级	IP69
输出负载（容性）	Max 470nF		
输出负载（阻性）	Min 4.7KΩ		
短路保护	有		
供电电流	≤5mA		
过压（压力）	2*P max		

▶ SELECTIVE CATALYTIC REDUCTION (SCR) PRESSURE SENSOR (COMMERCIAL VEHICLE)

| APPLICATION

The product is installed on SCR after-treatment system to detect the pressure of urea tank. The pressure sensor converts the detected pressure into electrical signal then input to the vehicle's control system.



FEATURE

- Ceramic capacitive sensing technology
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

| PARAMETER

Pressure Range (Customizable)	0.101~1.301MPaA		
Output Voltage (Customizable)	0.4~4.65V or 0.5~4.5V		
Accuracy (Adjustable)	±3%Vcc: -11°C~85°C		
Operating Temperature	-40°C~85°C		
Storage Temperature	-40°C~125°C		
Supply Voltage	4.75~5.25VDC	Burst Pressure	3*P max
Output Load (Capacitive)	Max 470nF	Overvoltage	28VDC
Output Load (Resistive)	Min 4.7KΩ	Reverse Voltage	-24VDC
Short-Circuit Protection	Yes	Cyclic Test	2,000,000 times
Supply Current	≤5mA	Housing Material	stainless steel
Proof (Pressure)	2*P max	Protection Level	IP69

► 环境压力传感器

| 应用

产品通常安装于汽车底盘上，实时检测环境中的压力变化情况，压力传感器把检测到的压力转化为电信号输入到车辆的控制系统。

特性

- MEMS传感技术
- 高性能，优异的长期稳定性和性能
- 智能化零位补偿和温度补偿
- 优良的EMC/ESD性能
- 过压和反向极性保护以及短路保护
- 在广泛的操作范围内提高准确度，行业领先的温度范围精度
- 广泛的工作温度范围
- 压力范围、输出曲线以及外形尺寸定制化设计
- 卓越的耐机械性能设计
- 高度模块化产品配置
- 出色的密封设计和防护设计
- 体积小，安装简单，小型紧凑型
- 低成本的OEM应用设计



压力传感器

| 参数

压力范围 (可定制)	44.8-110.3kPaA/10-115kPaA		
输出电压 (可定制)	0.5~4.5V/0.4-4.65V		
精度	10-85°C: ±1.5%FS; -40°C or 130°C: 2.4%FS		
工作温度	-40°C~130°C		
存储温度	-40°C~130°C		
供电电压	4.75-5.25VDC	爆压 (压力)	3*P max
输出负载 (容性)	Max 470nF	过电压	20VDC
输出负载 (阻性)	Min 4.7KΩ	反向电压	-20VDC
短路保护	有	循环实验	200万次
供电电流	5mA	外壳材料	PBT-GF30%
过压 (压力)	2*P max	防护等级	IP69

► ENVIRONMENTAL PRESSURE SENSOR

| APPLICATION

The product is usually installed on the chassis of the car, and the pressure changes in the environment are detected in real time. The pressure sensor converts the detected pressure into electrical signals and inputs them to the control system of the vehicle .



FEATURE

- MEMS sensing technique
- Excellent long-term stability
- Intelligent zero compensation and temperature compensation
- Excellent EMC/ESD performance
- Proof pressure and reverse polarity protection and short-circuit protection
- Improve accuracy in a wide range of operations, industry leading temperature range accuracy
- Wide range of operating temperature
- Pressure range, output curve, and dimension customization design
- Distinguished Vibration proof
- Highly modular product configurations
- Well sealing design and protective design
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

PARAMETER

Pressure Range (Customizable)	44.8-110.3kPaA/10-115kPaA
Output Voltage (Customizable)	0.5~4.5V/0.4-4.65V
Accuracy (Adjustable)	10-85°C: ±1.5%FS; -40°C or 130°C: 2.4%FS
Operating Temperature	-40°C~130°C
Storage Temperature	-40°C~130°C
Supply Voltage	4.75~5.25VDC
Output Load (Capacitive)	Max 470nF
Output Load (Resistive)	Min 4.7KΩ
Short-Circuit Protection	Yes
Supply Current	5mA
Proof (Pressure)	2*P max
Burst Pressure	3*P max
Overvoltage	20VDC
Reverse Voltage	-20VDC
Cyclic Test	2,000,000 times
Housing Material	PBT-GF30%
Protection Level	IP69

► 雨量光线阳光温湿度HUD传感器

| 应用

用于自动灯光、自动雨刮、自动空调、自动除雾、HUD亮度调节、自动雨天关窗、隧道识别等。



特性

- 功能丰富，最多支持五合一
- 雨量功能可自学习
- 符合汽车级
- 功能安全
- LIN通讯
- 12V电源供电
- 尺寸小巧，弹簧圈安装方式可选
- 平台化，同结构可支持不同功能

| 参数

通讯	LIN2.0/2.1		
工作电压	9~16V		
工作温度	-40~100°C		
工作电流	< 20mA		
温湿度功能	温度量程-40~100°C 典型精度±0.15°C；湿度量程0~100%RH 典型精度±2%RH		
适应玻璃范围	厚度4~8mm；曲率≥1400mm；红外透光率20%~60%；可见光透光率>70%		
休眠电流	≤50uA		
防护等级	IP5K0	阳光功能	量程0~1200w/m2 典型精度±10%
光线功能	量程0~10000lux 典型精度±10%	HUD功能	量程0~130000lux 典型精度±10%

► RLSTH SENSOR

| APPLICATION

Used for automatic lighting, automatic wiper, automatic air conditioning, automatic fog removal, HUD brightness adjustment, automatic rainy day window closing, tunnel recognition, etc.



FEATURE

- Feature-rich, supporting up to 5-in-1
- Rainfall function is self-learning
- Conforming to automobile class
- Functional safety
- LIN communication
- 12V power supply
- Compact size, Spring coil mounting options are available
- Platformized, the same structure can support different functions

| PARAMETER

Communication	LIN2.0/2.1		
Working Voltage	9~16V		
Operating Temperature	-40~100°C		
Working Current	<20mA		
Temperature And Humidity Function	temperature range -40~100°C; typical Accuracy ±0.15°C humidity range 0~100%; RH typical accuracy ±2%RH		
Adapt To Glass Range	thickness 4~8mm, curvature ≥1400mm; infrared transmittance 20%~60% visible light transmittance>70%		
Light Function	range 0~10000lux, typical accuracy ±10%		
Solar Function	range 0~1200w/m ² , typical accuracy ±10%	Sleep Current	≤50uA
Hud Function	range 0~130000lux, typical accuracy ±10%	Protection Level	IP5K0

► 气溶胶传感器

| 应用

气溶胶传感器应用于新能源车辆BMS系统（电池管理系统），监测电池包系统的异常失控状态，电池包在热失控状态下，内部会造成气溶胶释放，气溶胶传感器检测到异常信号后会报警并通过CAN信号传输，以感知当前车辆的电池包状态，提升车辆的安全性。



特性

- 光学迷宫设计原理
- CAN、PWM通讯
- 工作温度：-40~85°C
- 工作电压：8~16V
- 电源保护功能
- 支持连续模式、监控模式及休眠模式
- 支持传感器自诊断功能
- 参数在线配置，UDS升级
- 零位补偿及温度补偿
- 优良的EMC性能
- 满足车规级使用要求

| 参数

量程	0~10000 $\mu\text{g}/\text{m}^3$
低功耗唤醒阈值	5000 $\mu\text{g}/\text{m}^3$
过电压能力	24V
反向耐电压	14V
工作电流	<40mA
低功耗电流	< 0.5mA
检测精度	常温下浓度为5000 $\mu\text{g}/\text{m}^3$ 时，一致性误差 $\leq\pm 15\%$
故障检测	支持欠压、过压、光电器件故障等

▶ AEROSOL SENSOR

| APPLICATION

Aerosol sensor is applied to the BMS system of new energy vehicles (battery management system) to monitor the abnormal out-of-control state of the battery pack system. When the battery pack is in the thermal out-of-control state, the internal aerosol release will be caused. After detecting the abnormal signal, the aerosol sensor will alarm and transmit it through the CAN signal to sense the current state of the battery pack of the vehicle and improve the safety of the vehicle.



FEATURE

- Principle of optical labyrinth design
- CAN, PWM communication
- Operating temperature: -40~85°C
- Operating voltage: 8~16V
- Power supply protection function
- Supports continuous mode, monitoring mode, and sleep mode
- Supports sensor self-diagnosis
- Parameters are set online to upgrade the UDS
- Zero compensation and temperature compensation
- Excellent EMC performance
- Meet the requirements of vehicle specification level

| PARAMETER

Range	0~10000 $\mu\text{g}/\text{m}^3$
Low Power Wake-Up Threshold	5000 $\mu\text{g}/\text{m}^3$
Overvoltage Capacity	24V
Reverse Withstand Voltage	14V
Working Current	< 40mA
Low Power Current	< 0.5mA
Detection Accuracy	When the concentration is 5000 $\mu\text{g}/\text{m}^3$ at normal temperature, the consistency error is less than $\pm 15\%$
Fault Detection	undervoltage, overvoltage, photoelectric device fault, etc

► 车身单轴加速度传感器

| 应用

车身单轴加速度传感器安装在四轮悬架系统上或车身底盘上，用于监测悬架系统状态或车辆运行状态。车身单轴加速度传感器将检测到的加速度转换为电信号通过PSI5通讯协议传输给车辆的控制系统，以判断当前车辆的运行状态。



特性

- MEMS传感技术
- 宽测量范围
- 双线制通讯接口
- PSI5标准协议
- 高数据传输速度
- 优良的EMC性能
- 片上数字低通滤波器
- OTP编程
- 过压保护
- 汽车级应用

| 参数

测量量程（可定制）	±16g等
精度	±3.5%FS
供电电压	4.5~11V
工作温度	-40~125°C
存储温度	-55~150°C
分辨率	16Bit
工作电流	22~30mA
静态电流	4~6mA
灵敏度	480LSB/g
通讯速率	125kbps/189kbps
工作寿命	10年
防护等级	IP6K9

► BODY UNIAXIAL ACCELERATION SENSOR

| APPLICATION

The acceleration sensor is installed on the four-wheel suspension system or the chassis of the body to monitor the state of the suspension system or the running state of the vehicle. The acceleration sensor converts the detected acceleration into electrical signals and transmits them to the control system of the vehicle through the PSI5 communication protocol to judge the current running state of the vehicle.



FEATURE

- MEMS sensing technology
- Wide measuring range
- Dual wire communication interface
- PSI5 standard protocol
- High data transmission speed
- Excellent EMC performance
- On chip digital low pass filter
- OTP programming
- Power protection function
- Automotive Applications

| PARAMETER

Measuring Range (Customizable)	±16g
Accuracy	±3.5%FS
Supply Voltage	4.5~11V
Operating Temperature	-40~125°C
StorageTemperature	-55~150°C
Resolution	16Bit
Working Current	22~30mA
Static Current	4~6mA
Sensitivity	480LSB/g
Communication Speed	125kbps/189kbps
Working Life	10years
Protection Level	IP6K9

► 车身偏航率传感器

| 应用

车身偏航率传感器是用于对车辆动态变化的感知。用于测量车辆的纵向加速度 A_x ，横向加速度 A_y ，绕Z轴转速 W_z ，安装于尽量靠近车辆质心位置。偏航率传感器信号对于集成式制动控制系统而言是很重要的输入变量，通过 A_x 可以判断坡度和制动平顺性，通过 W_z, A_y 可以判断车辆姿态。



特性

- MEMS传感技术
- 宽测量范围
- 长生命周期
- 高灵敏度
- 低输出噪音
- 优良的EMC性能
- 宽数字低通滤波器
- 支持在线OBD升级
- 过压保护
- 高速CAN2.0B接口

| 参数

测量量程（可定制）	加速度 $\pm 1.8g$ ，角速度 $\pm 100^\circ/s$ (Ωz)
精度	$\pm 3\%$
加速度过量程范围	$\pm 10g$
角速度过量程范围	$\pm 1000^\circ/s$
供电电压	9~16V
工作温度	-40~125°C
存储温度	-55~150°C
工作电流	< 80mA@13.5V
检测时间	$\leq 5ms$
灵敏度	加速度3924LSB/g，角速度80LSB/ $^\circ/s$
过电压	24V
防护等级	IP6K7

► BODY YAW RATE SENSOR

| APPLICATION

The body yaw rate sensor is used to sense the dynamic changes of the vehicle. It is used to measure the vehicle's longitudinal acceleration A_x , lateral acceleration A_y , and rotation speed W_z around the Z-axis. It is installed as close to the vehicle's center of mass as possible. The yaw rate sensor signal is a very important input variable for the integrated braking control system. A_x can be used to judge the slope and braking comfort, and W_z and A_y can be used to judge the vehicle attitude.



FEATURE

- MEMS sensing technology
- Wide measuring range
- Long life cycle
- High sensitivity
- Low output noise
- Excellent EMC performance
- Wide digital low pass filter
- Support online OBD upgrade
- Power protection function
- High speed CAN2.0B interface

| PARAMETER

Measuring Range (Customizable)	acceleration: $\pm 1.8g$ angular velocity: $\pm 100^\circ/s$ (Ωz)
Accuracy	$\pm 3\%$
Acceleration Range Of Quanta	$\pm 10g$
Angular Velocity Range Of Quanta	$\pm 1000^\circ/s$
Supply Voltage	9~16V
Operating Temperature	$-40\sim 125^\circ C$
Storage Temperature	$-55\sim 150^\circ C$
Working Current	$< 80mA@13.5V$
Detection Time	$\leq 5ms$
Sensitivity	acceleration: 3924LSB/g angular velocity: 80LSB/ $^\circ/s$
Overvoltage	24V
Protection Level	IP6K7

► FDC磁通门电流传感器

| 应用

FDC磁通门电流传感器为一高精度直流电流测量装置，主要安装于电池组母排，用于监测充放电电流。

FDC采用磁通门技术，具有高精度，低磁滞等优点。



特性

- 磁通门原理
- 隔离电流测量，范围±500A，±700A，±1500A
- 最大工作温度：85°C
- 线性误差<0.1%
- 全温区误差<0.5%
- +8V~+16V供电
- 电源保护功能
- 高速CAN2.0B接口

| 参数

电流量程Lpm (可定制)	±500A; ±700A; ±1500A
供电电压	500A/700A量程: 12±4V, 标准值 13.5V; 1500A量程: +9V~+32V, 标准值12V/24V
工作温度	-40~85°C
工作电流	500A/700A量程: typ35mA; max45mA @IP=0A typ130mA @Ipm 1500A量程: typ130 @IP=0A typ850 @Ipm
线性度误差	±0.1% @±3σ全温区
零偏@IP= 0A	500A量程Io=±10mA @±3σ全温区 1500A量程Io=±100mA @±3σ全温区
精度@Ipm	±0.3% @±3σ +25°C; ±0.5% @±3σ全温区
防护等级	IP41

► FDC FLUXGATE CURRENT SENSOR

| APPLICATION

The FDC fluxgate current sensor is a high-precision DC current measurement device, mainly installed in the battery bus, used to monitor charge and discharge current.

FDC uses fluxgate technology, with high precision, low hysteresis and other advantages.



FEATURE

- Fluxgate principle
- Isolation current measurement, range $\pm 500\text{A}$
- Max operating temperature: 85°C
- The linear error is less than 0.1%
- The error of whole temperature zone is less than 0.5%
- $+8\text{V} \sim +16\text{V}$ power supply
- Power protection function
- High speed CAN2.0B interface

| PARAMETER

Current Range Lpm (Customizable)	$\pm 500\text{A}$; $\pm 700\text{A}$; $\pm 1500\text{A}$
Working Voltage	500A/700A range: $12\pm 4\text{V}$, typ 13.5V; 1500A range: $+9\text{V} \sim +32\text{V}$, typ 12V/24V
Operating Temperature	$-40 \sim 85^{\circ}\text{C}$
Working Current	500A/700A range: typ35; max45 @IP=0A; typ130 @Ipm 1500A range: typ130 @IP=0A typ800 @Ipm
Linear Error	$\pm 0.1\%$ @ $\pm 3\sigma$ whole temperature
Zero Offset@0A	500A/700A range: $I_0 = \pm 10\text{mA}$ @ $\pm 3\sigma$ whole temperature 1500A range: $I_0 = \pm 100\text{mA}$ @ $\pm 3\sigma$ whole temperature
Accuracy @Ipm	$\pm 0.3\%$ @ $\pm 3\sigma$ $+25^{\circ}\text{C}$ $\pm 0.5\%$ @ $\pm 3\sigma$ whole temperature
Protection Level	IP41

► HDC闭环霍尔电流传感器

| 应用

HDC电流传感器为一高精度直流电流测量装置，主要安装于电池组母排，用于监测充放电电流。HDC采用闭环霍尔技术，具有高精度，低磁滞等优点。



特性

- 闭环霍尔原理
- 隔离电流测量，范围 $\pm 1000\text{A}$
- 最大工作温度： 85°C
- 线性误差 $<0.05\%$
- 全温区误差 $<0.2\%$
- $+9\text{V}\sim+32\text{V}$ 供电
- 电源保护功能
- 高速CAN2.0B接口

| 参数

电流量程 I_{pm} (可定制)	$\pm 1000\text{A}$
供电电压	$+9\text{V}\sim+32\text{V}$ ，标准值 12V/24V
工作温度	$-40\sim 85^{\circ}\text{C}$
工作电流	60mA @ $I_P=0\text{A}$ 300mA @ I_{pm}
线性度误差	$\pm 0.05\%$ @ $\pm 3\sigma$ 全温区
零偏@ $I_P=0\text{A}$	$I_o=\pm 30\text{mA}$ @ $\pm 3\sigma$ 全温区；
精度@ I_{pm}	0.1%@ $\pm 3\sigma$ $+25^{\circ}\text{C}$ ； 0.2% @ $\pm 3\sigma$ 全温区
防护等级	IP41

► HDC CLOSED-LOOP CURRENT SENSOR

| APPLICATION

Fluxgate current sensor is a high-precision DC current measurement device, mainly installed in the battery bus, used to monitor charge and discharge current.

Fluxgate current sensor uses fluxgate technology, with high precision, low hysteresis and other advantages.



FEATURE

- Fluxgate principle
- Isolation current measurement, range $\pm 500\text{A}$
- Max operating temperature: 85°C
- The linear error is less than 0.1%
- The error of whole temperature zone is less than 0.5%
- +8 v~+16 v power supply
- Power protection function
- High speed CAN2.0B interface

| PARAMETER

Current Range Lpm (Customizable)	$\pm 1000\text{A}$
Working Voltage	+9V~+32V; typical 12V/24V
Operating Temperature	-40~85°C
Working Current	60mA @IP=0A 300mA @Ipm
Linear Error	$\pm 0.05\%$ @ $\pm 3\sigma$ whole temperature
Zero Offset @IP=0A	$I_0 = \pm 30\text{mA}$
Accuracy @Lpm	0.1% @ $\pm 3\sigma$ +25°C; 0.2% @ $\pm 3\sigma$ whole temperature
Protection Level	IP41

► BRH系列开环霍尔电流传感器

| 应用

BRH霍尔电流传感器可以测量DC、AC电流，带宽为DC~250KHz，主要用于新能源汽车，充电桩、电驱动、电池管理系统等。



特性

- 可编程国际大厂或国产的Hall芯片
- 编程调节以适配不同量程
- 符合汽车级
- 全温度范围误差控制在3%以内，线性度好
- 5V电源供电，电压输出
- 尺寸小巧，安装方式可选
- 产品结构简单，全隔离，性能稳定可靠
- 多种量程供客户选择，产品种类丰富

| 参数

电流量程（可定制）	±300A,±500A,±800A,±1200A,±1500A
工作电压	5±0.25V
工作温度	-40~125°C
工作电流	typ20; max25
零位输出	2.500V
输出曲线	$V_{out}=(U_c/5)\times(V_0+G\times I_p)$
总误差	零位：±13mV@常温，±18mV其他温度 带负载：±45mV@常温，±65mV其他温度
防护等级	IPx2

► BRH OPEN-LOOP HALL CURRENT SENSOR

| APPLICATION

The sensor can measure DC and AC current with a bandwidth of DC~250KHz. It is mainly used for new energy vehicles, charging piles, electric drives, battery management systems, etc.



FEATURE

- Programmable Hall chip of international or domestic IC factory
- Programmatic adjustment to fit different ranges
- Conforming to automobile class
- The whole temperature range error is controlled within 3%, good linearity
- 5V power supply, voltage output
- Compact size, optional installation
- Product structure is simple, fully isolated, stable and reliable performance
- A variety of ranges for customers to choose, product variety is abundant

| PARAMETER

Current Range (Customizable)	±300A, ±500A, ±800A, ±1200A, ±1500A
Working Voltage	5±0.25V
Working Temperature	-40~125°C
Working Current	typ20mA; max25mA
Zero Offset	2.500V
Output Curve	$V_{out}=(U_c/5) \times (V_0+G \times I_p)$
Total Error	zero: ±13mV@ normal temperature, ±18mV other temperatures with load: ±45mV@ normal temperature, ±65mV other temperatures
Protection Level	IPx2

► 分流器电流传感器

| 应用

分流器为一测量大电流的装置，量程可达几百安培至上千安培，主要用于EV/HEV的电动汽车电池管理系统（BMS）；分流器采用shunt技术，具有高精度，抗干扰能力强等优点。



特性

- 高精度、低温漂特殊材料电阻
- 结构简单尺寸小巧，通过螺栓直接与断点安装
- 可测量范围非常宽，从几安培到上千安培覆盖
- 高线性度、低温度系数
- 采用合金材质，有极好的长期稳定性
- LIN 2.2/ 2.1/ 2.0
- 极低的热电势
- 内置 NTC 温度传感器

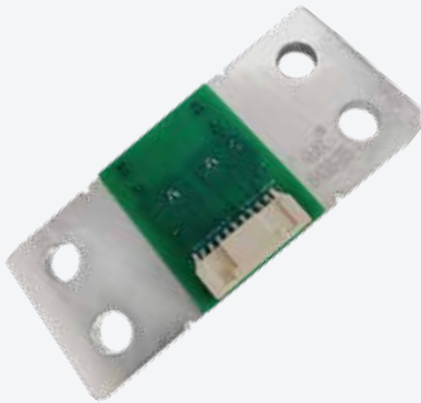
| 参数

电流量程（可定制）	$\pm 500A, \pm 1000A$
工作温度	$-40 \sim 105^{\circ}C$
阻值	$20\mu\Omega, 50\mu\Omega$
温漂	150ppm max
阻值误差	5%
NTC阻值	10K Ω
热电势	0.5 $\mu V/K$ max
电感	3nH max

► SHUNT CURRENT SENSOR

| APPLICATION

The shunt is a device for measuring large currents, ranging from several hundred amps to thousands of amps, mainly used in EV/HEV battery management systems (BMS), etc. The shunt adopts SHUNT technology, which has the advantages of high precision and strong anti-interference ability.



FEATURE

- High precision, special material resistance with low temperature drift.
- Simple structure and small size, through the bolt directly with the breakpoint installation
- Wide measurement range, from a few amps to thousands of amps.
- High linearity, low temperature coefficient.
- Alloy material, excellent long-term stability.
- LIN 2.2/ 2.1/ 2.0
- Low thermoelectric potential
- Built-in NTC temperature sensor

| PARAMETER

Current Range (Customizable)	±500A, ±1000A
Operating Temperature	-40~105°C
Resistance	20μΩ、50μΩ
Temperature Drift	150ppm max
NTC Resistance	10KΩ
Resistance Tolerance	5%
Thermoelectric Potential	0.5μV/K max
Inductance	3nH max

► 智能蓄电池传感器

| 应用

智能蓄电池传感器作为测量电流的装置，量程可达几百安培至上千安培（峰值），主要用于燃油车启动电池、EV/HEV的二级电池管理。产品给用户提供了12V铅酸电池的实时SOC/SOH/SOF状态。其主要采用shunt采样技术，具有高精度，抗磁干扰能力强等优点。



特性

- 高精度、低温漂特殊合金材料电阻
- 结构简单尺寸小巧，通过螺栓直接与端子安装
- 通过配置可适应不同的电池型号
- 智能电池管理芯片，实现监测铅酸电池的各种状态
- 良好的防水防尘性能
- 兼容LIN 2.2/ 2.1/ 2.0通讯

| 参数

电流量程	0~1500A
工作电压	6~19V
工作温度	-40~115°C
工作电流	50mA
测量功能	SOC\SOH\SOF
通讯方式	LIN 2.2/ 2.1/ 2.0
防护等级	IP6K9K
接插件	2PIN TE

► INTELLIGENT BATTERY SENSOR

| APPLICATION

IBS is a device for measuring current with a range of several hundred amperes to several thousand amperes (peak) and is mainly used for the secondary battery management of fuel powered vehicle batteries and EV/HEV. The product provides users with real-time SOC/SOH/SOF status of 12V lead-acid batteries. It mainly adopts shunt sampling technology, which has advantages such as high accuracy and strong anti magnetic interference ability.



FEATURE

- High precision, special material resistance with low temperature drift
- Simple structure and small size, through the bolt directly with the breakpoint installation
- Adapt to different battery models through configuration
- Intelligent battery management chip, achieving monitoring of various states of lead-acid batteries; Alloy material, excellent long-term stability
- Good waterproof and dustproof performance
- LIN 2.2/ 2.1/ 2.0

| PARAMETER

Current Range	0~1500A
Working Voltage	6~19V
Operating Temperature	-40~115°C
Working Current	50mA
Main Function	SOC\SOH\SOF
Communication	LIN 2.2/ 2.1/ 2.0
Protection Class	IP6K9K
Connector	2PIN TE

► 轮速传感器

| 应用

产品安装在车轮附近，检测车轮转动速度，车轮速度信息对于电子稳定程序（ESP）或防抱死制动系统（ABS）至关重要。因此，轮速传感器是现代汽车中最重要的传感器之一。



特性

- Hall/AMR/GMR传感技术
- 标准两线电流接口
- 集成电容，抗电磁干扰能力强
- 磁铁可集成，统一出厂标定，气隙稳定性高
- 更高的工作气隙
- 灵活性设计，标准/PWM/AK 信号输出
- 可识别方向
- 广泛的工作温度范围
- 多种芯片选择，匹配不同控制器需求
- 符合间接式胎压监测低跳动(Jetter)要求
- 有双芯片ASIL-D产品方案
- 采用PA612材料，防水性能优

| 参数

工作频率	2500/3000Hz	
输出电流	标准与PWM 7mA/14mA	AK 7mA/14mA/28mA
工作温度	-40°C~150°C	
供电电压	标准与PWM 4.4~20VDC	AK 6~20VDC
负载电阻	标准与PWM 15~75Ω	AK 15~50Ω
磁性环节距	3~8mm	
启动时间	≤1ms	
延迟时间	≤120us	
上升沿	8~24mA/us	
下降沿	8~24mA/us	
防护等级	IP69	

► WHEEL SPEED SENSOR

| APPLICATION

Wheel Speed Sensor (WSS) is installed near the wheel to detect the wheel rotation speed. The wheel speed information is very important for Electronic Stability Program (ESP) or Anti lock Braking System (ABS). Therefore, WSS is one of the most important sensors in modern vehicles.



FEATURE

- Hall/AMR/GMR sensing technology
- Standard two wire current interface
- Integrated capacitor, strong EMC performance
- Magnet integrated, and the air gap stability is high
- Higher working air gap
- Flexible design, Standard/PWM/AK signal output
- Recognizable direction
- Wide operating temperature range
- Multiple IC to match controller requirements
- Meet the requirements of indirect tire pressure monitoring about Jetter
- Dual IC meet ASIL-D
- PA612 material with excellent waterproof performance

| PARAMETER

Operating Frequency	2500/3000Hz
Output Current	standard and PWM 7ma/14mA AK 7mA/14mA/28mA
Operating Temperature	- 40 °C~150 °C
Supply Voltage	standard and PWM 4.4~20Vdc AK 6~20VDC
Load Resistance	standard and PWM 15~75Ω AK 15~50Ω
Encoder Pitch	3~8mm
Starting Time	≤1ms
Delay Time	≤120us
Rising Edge	8~24Ma/us
Falling Edge	8~24Ma/us
Protection Grade	IP69

► 变速箱转速传感器

| 应用

变速箱转速传感器是一种高精度速度检测装置，主要安装于变速箱输入轴和输出轴附近，用于输入轴和输出轴的转速，变速器TCU根据转速传感器的信号，从而更精确的控制换挡过程，以改善换挡感觉，提高汽车的行驶性能。

变速箱转速传感器采用霍尔和巨磁阻技术，具有高精度，低抖动等优点。



特性

- HALL、GMR传感技术
- 标准两线电流信号接口
- 最大工作温度：150°C
- 集成电容，电磁抗干扰能力强
- 更高的工作气隙
- 更高的工作频率
- 低电流消耗，更大的电压工作范围
- 满足ISO26262功能安全ASIL B等级
- 可识别方向，可灵活配置PWM脉宽
- 更好的振动抑制
- 更高的防护等级

| 参数

工作频率	0~12KHz
工作电压	+4V~+24V，典型值 9V/12V
工作温度	-40°C~150°C
工作电流	5.9~8mA/12~16mA，典型值7/14mA
脉宽宽度-正转	45/60/90μs
脉宽宽度-反转	90/120/180μs
脉宽宽度-无方向	180/30/360μs
上升沿时间tr	最大4μs
下降沿时间tf	最大4μs
启动时间	1ms
负载电阻	典型值100Ω
防护等级	IP6K9K

► TRANSMISSION SPEED SENSOR

| APPLICATION

Transmission speed sensor is a high-precision speed detection device, mainly installed in the transmission input shaft and output shaft near the speed of the input shaft and output shaft, transmission TCU according to the signal of the speed sensor, so as to more accurately control the shift process, to improve the shift feeling, improve the driving performance of the car.

The transmission speed sensor adopts Hall and giant reluctance technology, which has the advantages of high precision and low jitter.



FEATURE

- HALL、GMR sensing technology
- Standard two-wire current signal interface
- Max operating temperature: 150°C
- Integrated capacitance, strong electromagnetic anti-interference ability
- Higher working air gap
- Higher working Frequency
- Low current consumption, greater voltage operating range
- Meet ISO26262 Functional safety ASIL B
- The direction can be identified, and the PWM pulse width can be configured flexibly
- Better vibration suppression
- Higher level of protection

| PARAMETER

Operating Frequency	0~12KHz
Working Voltage	+4V~+24V, typical 9V/12V
Operating Temperature	-40~150°C
Working Current	5.9~8mA/12~16mA, typical 7/14mA
Plus Width-Forward	45/60/90μs
Plus Width-Reverse	90/120/180μs
Plus Width-Non Direction	180/30/360μs
Output Rise Time	Max4μs
Output Fall Time	Max4μs
Start Time	1ms
Load Resistance	typical 100 Ω
Protection Grade	IP6K9K

► 车身高度传感器

| 应用

车身高度传感器用于悬架、主动底盘控制或前照灯调平应用程序，目的是将车轮相对于底盘的位置转换成一个电气输出信号，供控制器使用。



特性

- Hall传感技术
- 模拟/PWM/PSI5通信
- 绝对角度测量
- 角度精度高
- 模块化设计，支架与连杆系列化
- 自润滑万向球窝，满足底盘防尘要求
- EOL在线标定
- 信号支持故障诊断
- 结构设计可靠，寿命高
- 适用于主动悬架系统

| 参数

角度范围	360°
分辨率	0.03°
总精度	±1.3%
工作电流	<49mA
工作温度	-40°C~125°C
供电电压	5±0.5VDC
信号输出	模拟/PWM/PSI5
防护等级	IP69

► HEIGHT LEVEL SENSOR

| APPLICATION

The sensor is used in suspension, active chassis control or headlamp leveling applications to convert the angle of the wheels relative to the chassis into an electrical output signal for use by the controller.



FEATURE

- Hall sensing technology
- PWM/PSI5 communication
- Absolute angle measurement
- High angle accuracy
- Modular design, support and connecting rod serialization
- Self lubricating universal ball socket meets the dust-proof requirements of chassis
- EOL online calibration
- Signal support fault diagnosis
- Reliable structural design and high service life
- For active suspension system

| PARAMETER

Angle Range	360 °
Resolution	0.03 °
Total Accuracy	±1.3%
Working Current	<49mA
Operating Temperature	- 40 °C~125 °C
Power Supply Voltage	5±0.5vdc
Signal Output	analog/PWM/PSI5
Protection Grade	IP69

► 电机位置传感器

| 应用

电机位置传感器用于检测电机转子转动角度等物理量，转换为电信号传递给系统控制器。



特性

- 电感式感应电机角度，可端部或贯穿式安装
- PCB板实现线圈设计，成本低，EMC性能优越
- 精度高达0.2°
- 电感工作原理抗电磁干扰能力强
- 多对极设计，精度高
- 冗余设计，双路输出，安全级别ASIL-D
- EOL在线标定
- 信号支持故障诊断
- 适用于线控制动系统

| 参数

工作温度	-40°C~+150°C
角度精度	±0.2°
信号输出	差分SIN COS 或 SPI
消耗电流	<80mA
转速支持	10000rpm
工作次数	>50000

► MOTOR POSITION SENSOR

| APPLICATION

Motor position sensors, which are used to detect physical quantities such as motor rotor rotation angle, which are converted into electrical signals and transmitted to the system controller.



FEATURE

- Inductive induction, installed end through
- PCB board coil design, low cost, Higher EMC
- Accuracy up to 0.2°
- The working principle of inductance has strong anti electromagnetic interference ability
- Multi pole design, high precision
- Redundant design, dual output, safety level ASIL-D
- EOL online calibration
- Signal support fault diagnosis
- Applicable to brake by wire system

| PARAMETER

Operating Temperature	- 40 °C~ +150 °C
Angle Accuracy	±0.2 °
Signal Output	differential SIN, COS or SPI
Consumption Current	<80mA
Speed Support	10000rpm
Number Of Work	> 50000

► 变速箱位置传感器

| 应用

变速箱位置传感器是一种高精度位置检测装置，主要用于变速箱各轴精确位置的检测，变速器TCU根据位置传感器的信号，从而更精确的控制换挡过程，以改善换挡感觉，提高汽车的行驶性能。



特性

- 3D HALL技术
- 支持模拟量、PWM、SENT协议输出
- 最大工作温度：150℃
- 抗外界杂散磁场能力强
- 更大的工作行程
- 更高的精度
- 低电流消耗
- 满足ISO26262功能安全ASIL B等级
- 支持单路、双路输出
- 可集成多个位置传感器为簇
- 更高的防护等级

| 参数

工作行程	0~42mm°
工作电压	5±0.5V
工作温度	-40~150℃
工作电流	最大15mA
工作协议	Analog、PWM、SENT
分辨率	12 bit
精度	≤±0.5mm
防护等级	IP6K9K

► TRANSMISSION POSITION SENSOR

| APPLICATION

Transmission position sensor is a high-precision position detection device, mainly used for the detection of the precise position of each shaft of the transmission, transmission TCU according to the signal of the position sensor, so as to more accurately control the shifting process to improve the shifting feeling and improve the driving performance of the car.



FEATURE

- 3D HALL technology
- Supports analog, PWM, and SENT protocol output
- Max operating temperature: 150°C
- Strong resistance to external stray magnetic field
- Greater working distance
- higher accuracy
- Low current consumption
- Meet ISO26262 Functional safety ASIL B level
- Supports single or dual output
- Multiple position sensors can be integrated into clusters
- Higher level of protection

| PARAMETER

Operating Stroke	0~42mm
Working Voltage	5±0.5V
Operating Temperature	-40~150°C
Working Current	Max 15mA
Work Protocol	Analog、PWM、SENT
Resolution	12 bit
Accuracy	≤±0.5mm
Protection Grade	IP6K9K

► 座椅位置传感器

| 应用

座椅位置传感器为一高精度线性位置测量装置，主要安装于前排座椅位置轨道上或者后排折叠座椅的锁扣上，用于前排座椅检测，后排座椅折叠状态监测。

座椅位置传感器采用霍尔技术，具有高精度，低回差等优点。



特性

- 线性霍尔原理
- 检测位置范围：0~30mm/0~20°
- 可编程开关信号
- 温度范围：-40~85°C
- 电压范围：+3V~+24V
- 全温区误差 $\pm 1\text{mm}$
- 电源保护功能
- 二线制电流接口

| 参数

检测位置范围(可定制)	$\pm 30\text{mm}/\pm 20^\circ$
供电电压 U_c	+3V~+24V 典型值 12V
工作温度T	-40~85°C
工作电流I	5 ~ 17mA
高电流 I_h	12~17mA
低电流 I_L	5~6.9mA
位置误差	$\pm 1\text{mm}$
回差	<math>< 1\text{mm}</math>
防护等级	IP67

► SEAT POSITION SENSOR

| APPLICATION

The seat position sensor is a high-precision linear position measuring device, mainly installed on the front seat position track or the lock buckle of the rear folding seat, used for front seat detection and rear seat folding status monitoring.

The seat position sensor uses Hall technology, which has the advantages of high accuracy and low backlash.



FEATURE

- Linear Hall principle
- Detection position range: 0~ 30mm/0~ 20°
- Programmable switching signal
- Temperature range: -40~ 85 °C
- Voltage range: +3V~+24V
- Total temperature range error $< \pm 1$ mm
- Power protection function
- Two-wire current interface

| PARAMETER

Detection Position Range (Customizable)	$\pm 30\text{mm}/\pm 20$
Power Supply Voltage U_c	+ 3V~ + 24V typical value 12V
Temperature Range	-40~85°C
Operating Current I	5 ~ 17mA
High Current I_h	12~17mA
Low Current I_L	5~6.9mA
Position Error	± 1 mm
Backlash	<1mm
Protection Level	IP67

► 踏板位置传感器

| 应用

踏板位置传感器用于检测踏板位移等物理量，转换为电信号传递给系统控制器。



特性

- Hall传感技术
- 冗余设计，双路输出，安全级别ASIL-D
- EOL在线标定
- 信号支持故障诊断
- 差分模拟量、PWM与SENT输出可选
- 适用于线控制动系统

| 参数

工作温度	-40°C~+150°C
测量行程	0-42mm
信号输出	PWM 或 SENT
信号精度	±0.2mm
功能安全级别	ASIL-D
数字分辨率	12bit (0.015mm/bit)
刷新率	<1ms

► PEDAL POSITION SENSOR

| APPLICATION

Pedal position sensors, which are used to detect physical quantities such as pedal displacement, which are converted into electrical signals and transmitted to the system controller.



FEATURE

- Hall sensing technology
- Redundant design, dual output, safety level ASIL-D
- EOL online calibration
- Signal support fault diagnosis
- Differential analog, PWM and sent outputs are optional
- Applicable to brake by wire system

| PARAMETER

Operating Temperature	- 40 °C~+150 °C
Measuring Stroke	0-42mm
Signal Output	PWM or SENT
Signal Accuracy	±0.2mm
Functional Security Level	ASIL-D
Digital Resolution	12bit (0.015mm/bit)
Refresh Rate	<1ms

▶ 踏板转角传感器

| 应用

踏板转角传感器是一种高精度测量角度检测装置，主要用于油门、制动踏板角度的检测。



特性

- 3D HALL技术
- 支持模拟量、PWM、SENT协议输出
- 最大工作温度：150℃
- 抗外界杂散磁场能力强
- 更大的工作行程
- 更高的精度
- 低电流消耗
- 满足ISO26262功能安全ASIL B等级
- 支持单路、双路输出
- 更高的防护等级

| 参数

工作角度范围	0~360°
工作电压	5±0.5V
工作温度	-40~150℃
工作电流	最大15mA
工作协议	Analog、PWM、SENT
分辨率	12 bit
精度	≤±1.5°
防护等级	IP6K9K

► PEDAL ANGLE SENSOR

| APPLICATION

The pedal Angle sensor is a kind of high precision Angle measuring device, which is mainly used to detect the Angle of the accelerator and brake pedal.



FEATURE

- 3D HALL technology
- Supports analog, PWM, and SENT protocol output
- Max operating temperature: 150°C
- Strong resistance to external stray magnetic field
- Greater working distance
- higher accuracy
- Low current consumption
- Meet ISO26262 Functional safety ASIL B level
- Supports single or dual output
- Higher level of protection

| PARAMETER

Operating Stroke	0~12KHz
Working Voltage	5±0.5V
Operating Temperature	-40~150°C
Working Current	Max 15mA
Work Protocol	Analog、PWM、SENT
Resolution	12 bit
Accuracy	≤±1.5°
Protection Grade	IP6K9K

► 方向盘转角传感器

| 应用

产品安装在组合开关或转向管柱末端，检测方向盘转动角度，通过CAN通信提供方向盘转动角度与速度等信号，此信号应用于电子稳定程序、倒车影像、自动泊车、自动驾驶等系统。



特性

- Hall传感技术
- CAN通信
- 绝对角度测量
- 断电后无需连接电池，上电立即有角度输出
- 抗翘曲设计降低扭矩噪音
- 无需螺丝固定，安装便捷
- 多种角度范围可选，适用于乘用车与商用车
- 支持在线标定
- 支持BootLoader
- 支持故障诊断
- 角度精度高

| 参数

角度范围	±780°、±1560°		
角度精度	v±2.5°		
非线性	±0.2°		
迟滞	<2°		
速度范围	0~1060°/s		
分辨率	角度 0.1°，速度 4°/s	扭矩范围	8Ncm
工作电流	<100mA	CAN速率	500k
工作温度	-40°C~85°C	刷新时间	10ms
供电电压	6~20VDC	标定时间	≤500ms

► STEERING ANGLE SENSOR

| APPLICATION

The steering angle sensor (SAS) is installed with combination switch or at the end of the steering column, it detects the steering wheel rotation angle and provide signals such as steering wheel rotation angle and speed through CAN. This signal is applied to Electronic Stability Program,, automatic parking, automatic driving and other systems.



FEATURE

- Hall sensing technology
- CAN communication
- Absolute angle measurement
- No need to connect the battery after power off, True power on
- Anti warping design reduces torque noise
- No screw fixing, easy installation
- A variety of angle ranges available, suitable for passenger cars and commercial vehicles
- Support online calibration
- Support bootloader
- Support fault diagnosis
- High angle accuracy

| PARAMETER

Angle Range	±780 °, ±1560 °		
Angle Accuracy	±2.5 °		
Nonlinearity	±2 °		
Vhysteresis	<2 °		
Speed Range	0-1060 ° / S		
Resolution	angle 0.1 °, speed 4 ° / s	Torque Range	8Ncm
Working Current	<100mA	Can Speed	500K
Operating Temperature	- 40 °C~85 °C	Refresh Time	10ms
Supply Voltage	6~20VDC	Calibration Time	≤500ms

► 刹车磨损传感器

| 应用

产品测量刹车盘磨损程度。传感头安装于刹车盘固定厚度处，当盘磨损到阈值时，传感头内部被接通，向后续控制单元输出信号。



特性

- 电阻+机械结构方案
- 高性能，优异的长期稳定性和性能
- 优良的EMC/ESD性能
- 产品提供多种信号模式可选
- 广泛的工作温度范围
- 卓越的耐机械性能设计
- 体积小，安装简单，小型紧凑型
- 低成本的OEM应用设计

| 参数

触发点（可定制）	2~7.5mm
输入电压	乘用车16V，商用车24V
工作温度	-40°C ~130°C
存储温度	-40°C ~130°C
产品寿命	1.2万公里
线束材料	基于SAE/USCAR-12
防护等级	IP69

► BRAKE WEAR INDICATOR

| APPLICATION

The brake wear Indicator measures the wear of the brake pads. These pads include a wire, which comes in contact with the brake disc after wear. This will transmit a signal to the control unit after reach the threshold.



FEATURE

- Resistor + mechanical structure solution
- Excellent long-term stability and robustness
- Excellent EMC/ESD performance
- Customizable single- or multiple sensing signals solution
- Wide range of operating temperature
- Excellent mechanical resistance design (Vibration proof, etc.)
- Small volume, easy for installation, small and compact
- Low-cost OEM application design

| PARAMETER

Threshold Point (Customizable)	2~7.5mm
Supply Voltage	passager car with 16V, commercial cars with 24V
Operating Temperature	-40°C ~130°C
Storage Temperature	-40°C ~130°C
Lifetime	12k km
Harness Material	based on SAE/USCAR-12
Protection Level	IP69



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