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Midea Key Accounts Region

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Home Appliance South China Key Accounts Region

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Japan Region

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The Europe and America Region Phone Number: +8615607290087 Automotive Chongqing Region Phone Number: +8618871880309

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# Ceramic capacitive Pressure sensor

PRODUCT CATALOG



## COMPANY INTRODUCTION

#### **ENTERPRISE INTRODUCTION**

HGGaoli Electronics Co., Ltd. was founded in 1988. With more than 30 years of expertise in sensor industry, HGGaoli has developed into a world–leading supplier of multifunctional sensors and PTC thermal management systems.

Born out of Huazhong University of Science and Technology, HGGaoli holds eight innovation platforms at both provincial and national levels, including the Engineering Research Center for Functional Ceramics of Ministry of Education and the National CNAS Laboratory. HGGaoli has won the title of "Single-product Champion Enterprise in Manufacturing Industry" and the title of "Intellectual Property Demonstration Enterprise" in China, and owns the independent core technologies of chip manufacturing and packaging.

Today, HGGaoli has built up one of the world's largest manufacturing site for multifunctional sensors and PTC heaters in Xiaogan National High-tech Zone, with more than 2000 employees and 2 subsidiaries—Wuhan HG Xin Gaoli Electronics Co., Ltd. and HGGaoli Electronics(Thailand) Co., Ltd. Meanwhile, a new overseas manufacturing base is planned to be established in Europe, and will be put into service in 2026. We currently provide services for numerous well–known enterprises across the world, spreading our business over more than 30 countries and regions including Europe and the United States, Japan and South Korea, and Southeast Asia.

#### **ENTERPRISE SPIRIT**

Open Professional Efficient

#### **COMPANY QUALIFICATION**





**孝感华工高理电子有限公司** 

SGS





ISO 45001







CQC-Product Certification

VDE-Product Certifification

UL-Product Certifification TUV-Product Certifification

## Pressure Sensor Project Overview





- Thousand level(320m²)/ 100K level(500m²) purification workshop for ceramic capacitor cores, and the peak production capacity is 20 million/year
- 100K level(600 m²) purification workshop for sensor assembly, peak capacity of 15 million/ year
- Industry-benchmarking sample line and full-performance special laboratory
- Industry-leading intelligent manufacturing level
- With independent core intellectual property rights, the company holds technical advantages that cannot be replicated in pressure sensors and temperature-pressure integrated sensors for commercial air conditioners



#### Main Parameters

· Operating Pressure: 276~3032KPaA(Range Adjustable)

Max Pressure: 5.88MPa
Burst Pressure: 9.8MPa

· Operating Temperature: -40~+135 ℃

· Working medium: HFC134a, PAG oil, R134A, 1234yf, HFO1234YF, R290, R32, R57, R404a

· Working Voltage: 5V ± 0.25VDC

· Output Voltage: 9.22%~92.5%VCC

· Accuracy Range: ±2%FS, ±1.5%(0~85 °C), ±1%(25 °C)



#### Product Function

 Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- High measurement accuracy to ensure that ECU adopts the optimal control strategy for the air conditioning system
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 5~3914KPaA(Range Adjustable)

Max Pressure: 7828KpaBurst Pressure: 7828Kpa

· Operating Temperature: -40~+135 ℃

· Working Medium: HFC134a, PAG oil, R134A,1234yf, HFO1234YF, R290, R32, R57, R404a

Working Voltage: 5V ± 0.1VDC
Output Voltage: 11.2%~90Vs

· Accuracy Range: ±2%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)



#### Product Function

 Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy to ensure that ECU adopts the optimal control strategy for the air conditioning system
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 15~515PSIA(Range Adjustable)

· Max Pressure: 772.5PSIA · Burst Pressure: 1545PSIA

· Operating Temperature: -40~+135℃

· Working Medium: HFC134a, PAG oil, R134A, 1234yf, HFO1234YF, R290, R32, R57, R404a

· Working Voltage: 5V ± 0.1VDC · Output Voltage: 10%~90%Vcc

· Accuracy Range: ±2%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)



#### **Product Function**

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring. optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy to ensure that ECU adopts the optimal control strategy for the air conditioning system
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 0~3.138MpaG(Range Adjustable)

Max Pressure: 5.2MpaGBurst Pressure: 9.75MpaG

· Operating Temperature: -40~+135 ℃

· Working Medium: HFC134a, PAG oil, R134A, 1234yf, HFO1234YF, R290, R32, R57, R404a

Working Voltage: 5V ± 0.1VDC
Output Voltage: 10%~90%Vcc

· Accuracy Range: ±2%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)



#### Product Function

 Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy to ensure that ECU adopts the optimal control strategy for the air conditioning system
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 0~3.5MpaG(Range Adjustable)

Max Pressure: 7MpaGBurst Pressure: 10.5MpaG

· Operating Temperature: -40~+135 ℃

· Working Medium: HFC134a, PAG oil, R134A, 1234yf, HFO1234YF, R290, R32, R57, R404a

Working Voltage: 5V ± 0.1VDC
Output Voltage: 10%~90%Vs

• Accuracy Range:  $\pm 2\%$ FS,  $\pm 1.5\%(0~85 \degree)$ ,  $\pm 1\%(25 \degree)$ 



#### Product Function

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy to ensure that ECU adopts the optimal control strategy for the air conditioning system
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 1.37~7.59barA(Range Adjustable)

Max Pressure: 15barABurst Pressure: 60barA

· Operating Temperature: -40~+135 ℃

· Working Medium: HFC134a, PAG oil, R134A, 1234yf, HFO1234YF, R290, R32, R57, R404a

Working Voltage: 5V ± 0.1VDC
Output Voltage: 5%~95%Vcc

· Accuracy Range: ±2%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)



#### Product Function

 Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy to ensure that ECU adopts the optimal control strategy for the air conditioning system
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



## Temperature-pressure Integrated Sensor Application

#### Main Parameters

· Operating Pressure: 0~4MPa(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)

· Operating Temperature: -40°C~+135°C

· Protection Pressure: 2 times

· Burst Pressure: 3 times

· Working Medium: HFC134a, PAG oil, R134A, 1234yf, HFO1234YF, R290, R32, R57, R404a

· Service Life: Five million full-scale cycles

· Power Supply Voltage: 5.0 ± 0.1vdc

· Output Voltage: 0.5~4.5vdc



#### Product Function

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy to ensure that ECU adopts the optimal control strategy for the air conditioning system
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium

### Temperature-pressure Integrated Sensor Application



#### Main Parameters

· Operating Pressure: 0~4MPa(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 °C), ±1%(25 °C)

· Operating Temperature: -40°C~+135°C

· Protection Pressure: 2 times

· Burst Pressure: 3 times

· Working Medium: HFC134a, PAG oil, R134A, 1234yf, HFO1234YF, R290, R32, R57, R404a

· Service Life: Five million full-scale cycles

· Power Supply Voltage: 5.0 ± 0.1vdc

· Output Voltage: 0.5~4.5vdc



#### **Product Function**

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy to ensure that ECU adopts the optimal control strategy for the air conditioning system
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



## Temperature-pressure Integrated Sensor Application

#### Main Parameters

· Operating Pressure: 0~4MPa(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)

· Operating Temperature: -40°C~+135°C

· Protection Pressure: 2 times

· Burst Pressure: 3 times

· Working Medium: HFC134a, PAG oil, R134A, 1234yf, HFO1234YF, R290, R32, R57, R404a

· Service Life: Five million full-scale cycles

· Power Supply Voltage: 5.0 ± 0.1vdc

· Output Voltage: 0.5~4.5vdc



#### Product Function

 Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy to ensure that ECU adopts the optimal control strategy for the air conditioning system
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium

### Engine Oil Pressure Sensor Application



#### Main Parameters

· Operating Pressure: 50~1050KPa(Range Adjustable)

Max Pressure: 1800KPa
Burst Pressure: 2700KPa

· Operating Temperature: -40~+135℃

Working Medium: Engine oil
Working Voltage: 5V ±0.1VD
Output Voltage: 0.5—4.6V

· Accuracy Range: ±2%FS, ±1.5%(0~85 °C), ±1%(25 °C)



#### Product Function

- · Measure the engine oil pressure and output it to ECU to display it on the oil pressure gauge
- · ECU will give an alarm and take control measures to protect the engine when the oil pressure is too low

- · High measurement accuracy, ECU can accurately measure and control the oil pressure of the engine
- · Good reliability and long service life, suitable for working in harsh environment of automobile system
- Ceramic capacitive structure, good compatibility with measuring medium, reliable operation within the whole temperature range



## Gear Box Pressure Sensor Application

#### Main Parameters

· Operating Pressure: 0.1~7.1MPa(Range Adjustable)

Max Pressure: 12MPaBurst Pressure: 18MPa

· Operating Temperature: -40~+135℃

· Working Medium: Gear box oil

Working Voltage: 5V ± 0.25VDCOutput Voltage: 10%~96.16VCC

· Accuracy Range:  $\pm 2.5\%$ FS,  $\pm 1.5\%(0~85~\%)$ ,  $\pm 1\%(25~\%)$ 

· Durability: Two million cycles at full pressure & temperature scale



#### Product Function

· Measure oil pressure of gear box

- · High measurement accuracy that allows the gear box controller to accurately measure oil pressure
- · Good reliability and long service life, suitable for working in harsh environment of automobile system
- · Ceramic capacitive structure, good compatibility with measuring medium, reliable operation within the whole temperature range

### Gear Box Pressure Sensor Application



#### Main Parameters

· Operating Pressure: 1~10MPa(Range Adjustable)

Max Pressure: 15MPa
Burst Pressure: 20MPa

· Operating Temperature: -40~+135℃

Working Medium: Gear box oil
Working Voltage: 5V ± 0.25VDC
Working Voltage: 0.5~4.5VDC

· Accuracy Range:  $\pm 2.5\%$ FS,  $\pm 1.5\%$ (0~85 °C),  $\pm 1\%$ (25 °C)

· Durability: Two million cycles at full pressure & temperature scale



#### Product Function

· Measure oil pressure of gear box

- · High measurement accuracy that allows the gear box controller to accurately measure oil pressure
- · Good reliability and long service life, suitable for working in harsh environment of automobile system
- · Ceramic capacitive structure, good compatibility with measuring medium, reliable operation within the whole temperature range



### Water Pressure Sensor Application

#### Main Parameters

· Operating Pressure: 0~1MPaG(Range Adjustable)

Max Pressure: 2MPaBurst pressure: 6MPa

· Operating Temperature: −40~+125°C

· Working Medium: Water/ ethylene glycol

Working Voltage: 5V ± 0.25VDC
 Output Voltage: 0.5~4.5VDC

· Accuracy Range: ±2.5%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)

· Durability: Two million cycles at full pressure & temperature scale



#### Product Function

· Measure water/ ethylene glycol pressure

- · High measurement accuracy for the measurement of water/ ethylene glycol pressure
- Good reliability and long service life, suitable for working in harsh environments of water pressure systems
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium , reliable operation within the whole temperature range

## Hirschmann Joint Pressure Sensor Application



#### Main Parameters

· Operating Pressure: 0~25BARA(Range Adjustable)

Max Pressure: 50barBurst pressure: 75bar

· Operating temperature: -30~120℃

· Working Medium: Refrigerant/ water etc.

Working Voltage: 24VDCOutput Current: 4~20mA

· Accuracy Range: ±1%FS, ±0.5%(25 ℃)

· Durability: Two million cycles at full pressure & temperature scale



#### Product Function

· Measure refrigerant/ water pressure

- · High measurement accuracy for measuring the pressure of mediums such as refrigerant and water
- · Good reliability and long service life, suitable for working in harsh environments
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium, reliable operation within the whole temperature range



#### Main Parameters

· Operating Pressure: 0~4.6Mpa(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)

· Operating Temperature: -30°C~+100°C

Protection Pressure: 6.9MpaBurst Pressure: 9.2Mpa

· Working Medium: R134A, R22, R290, R32, R401A, R404A, R407C, R410A, R448A, R507, PAG oil

Service Life: Five million full-scale cycles
 Power Supply Voltage: 5.0 ± 0.1VDC

· Output Voltage: 0.5~4.5VDC



#### Product Function

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 0~4.15MPaG(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)

· Operating Temperature: -30°C~+100°C

· Protection Pressure: 8.3MpaG

· Burst Pressure: 12.45MpaG

· Working Medium: R134A, R22, R290, R32, R401A,

R404A, R407C, R410A, R448A, R507, PAG oil

· Service Life: Five million full-scale cycles

· Power Supply Voltage: 5.0 ± 0.1VDC

· Output Voltage: 0.5~4.5VDC



#### Product Function

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 0~30barG(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 °C), ±1%(25 °C)

· Operating Temperature: -30°C~+100°C

· Protection Pressure: 60barG

· Burst Pressure: 90barG

· Working Medium: R134A, R22, R290, R32, R401A, R404A, R407C, R410A, R448A, R507, PAG oil

· Service Life: Five million full-scale cycles

· Power Supply Voltage: 5.0 ± 0.1 VDC

· Output Voltage: 0.5~4.5VDC



#### Product Function

 Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 0~5MpaG(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 °C), ±1%(25 °C)

· Operating Temperature: -30°C~+85°C

· Protection Pressure: 10MpaG

· Burst Pressure: 15MpaG

· Working Medium: R134A, R22, R290, R32, R401A, R404A, R407C, R410A, R448A, R507, PAG oil

· Service Life: Five million full-scale cycles

· Power Supply Voltage: 5.0 ± 0.1VDC

· Output Voltage: 0.5~4.5VDC

· Ingress Protection: IP69



#### **Product Function**

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- High measurement accuracy
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 0~4.15MpaG(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 °C), ±1%(25 °C)

· Operating Temperature: -30°C~+85°C

· Protection Pressure: 8.3MpaG

· Burst Pressure: 12.45MpaG

· Working Medium: R134A, R22, R290, R32, R401A, R404A, R407C, R410A, R448A, R507, PAG oil

· Service Life, Five million full-scale cycles

· Power Supply Voltage: 5.0 ± 0.1 VDC

· Output Voltage: 0.5~3.5VDC

· Ingress Protection: IP69



#### Product Function

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 0~2MpaG(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 °C), ±1%(25 °C)

· Operating Temperature: -30°C~+85°C

· Protection Pressure: 4MpaG

· Burst Pressure: 6MpaG

· Working Medium: R134A, R22, R290, R32, R401A, R404A, R407C, R410A, R448A, R507, PAG oil

· Service Life: Five million full-scale cycles

· Power Supply Voltage: 5.0 ± 0.1VDC

· Output Voltage: 0.5~3.5VDC

· Ingress Protection: IP69



#### **Product Function**

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- High measurement accuracy
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 0~4.3MpaG(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 ℃), ±1%(25 ℃)

· Operating Temperature: -30°C~+85°C

· Protection Pressure: 8.6MpaG

· Burst Pressure: 12.9MpaG

 Working Medium: R134A, R22, R290, R32, R401A, R404A, R407C, R410A, R448A, R507, PAG oil

· Service Life: Five million full-scale cycles

· Power Supply Voltage: 5.0 ± 0.1VDC

· Output Voltage: 0.5~3.5VDC

· Ingress Protection: IP69



#### Product Function

· Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- · High measurement accuracy
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium



#### Main Parameters

· Operating Pressure: 0.448~4.2MpaG(Range Adjustable)

· Accuracy Range: ±2%FS, ±1.5%(0~85 °C), ±1%(25 °C)

· Operating Temperature: -30°C~+85°C

· Protection Pressure: 8.4MpaG

· Burst Pressure: 12.6MpaG

· Working Medium: R134A, R22, R290, R32, R401A, R404A, R407C, R410A, R448A, R507, PAG oil

· Service Life: Five million full-scale cycles

Power Supply Voltage: 5.0 ± 0.1VDC

· Outout Voltage: 0.5~4.5VDC

· Ingress Protection: IP69

#### Product Function

 Measure refrigerant pressure of air conditioning system for ECU to achieve real-time monitoring, optimize system control strategy, reduce idling speed and save energy consumption

- High measurement accuracy
- · PWM or voltage output interface types, according to customer's choice
- · Ceramic capacitive structure, fast response speed and good compatibility with measuring medium