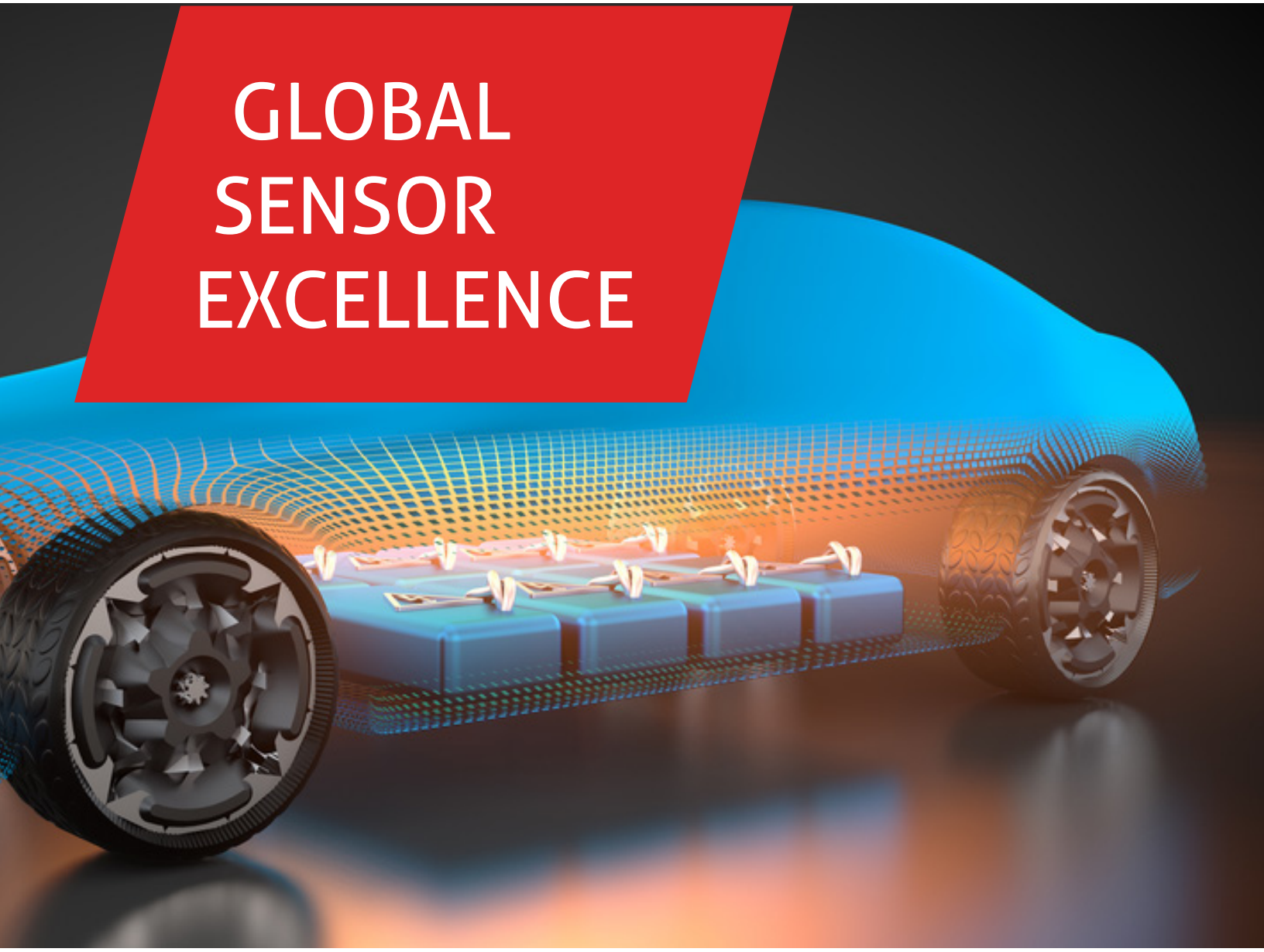


Pressure Sensors for Automotive Testing and Research

PMC
an STS company

RELIABLE PRESSURE MEASUREMENT DEMANDS A STRONG CORE TECHNOLOGY

A carefully produced pressure sensor is the best prerequisite for accurate measurement results over the entire product life. Pressure transmitters using piezoresistive semiconductor technology are characterized by their high sensitivity and reliability, which is why pressures in ranges <1 psi, can be recorded with great precision.

However, when using the appropriate silicon, pressure ranges of > 20,000 psi or 1,500 bar are equally achievable with the same high accuracy and performance. Procedures such as the compensation of temperature based errors ensure the highest measurement accuracy. Our pressure transmitters are also extremely reliable demonstrated by high overpressure specification.

THE STRENGTHS OF OUR CORE TECHNOLOGY AT A GLANCE:

Overpressure (Proof Pressure)

Our standard pressure transmitters can typically tolerate between 3 and 10 times the measurement range without suffering any damage or effecting the calibration. The overpressure can also be customized to the application.

High Precision, Low Total Error

Temperature errors are already compensated during production. Each product is optimized for its respective application.

Excellent Long-term Stability

PMC-STS produces only high-quality measuring cells. To achieve outstanding long-term stability, these are thermally treated through temperature cycling and other proprietary procedures. This reduces measurement errors to a minimum and significantly reduces the measurement uncertainty.

The silicon sensor element is protected by a welded isolation diaphragm.

Core technology: Piezoresistive measuring cells

TRUSTED PARTNERS FOR CUSTOMIZING TEST AND MEASUREMENT SOLUTIONS

For more than 60 years, PMC-STS has been committed to serving R&D and test engineers and customizing solutions for various stress test applications.

Various electrical connectors are available to support IP67 (NEMA 4X) sealing.

PMC-STS provides a variety of customized solutions. We can customize a solution for your measurement needs.

PMC-STS offers a wide assortment of process connections including bulkhead fittings for through-panel mounting.

WHY PMC-STS IS THE IDEAL PARTNER FOR THE AUTOMOBILE TESTING AND MEASUREMENT INDUSTRY:

Solutions That Exactly Meet Your Specifications

Consider our sales engineers as competent partners to help you develop the ideal pressure measurement solution for your project.

In-house Production Ensures High Quality Standards

Thanks to our own production of measuring cells, we can guarantee the high quality of our core technology. We also develop, manufacture and test the solution that meets your requirements in-house.

We Advise You On-Site

With our global sales network, we can provide you with competent advice on-site. Our expertise built up over 30 years, is always there when you need it.

ENGINE/GEARBOX TEST BENCH

The gas/diesel engine test bench is configured for use on measurement and control systems, engines, and related auxiliary systems.

During the test bench working period, there are no water tank radiator, fuel tank, and other components attached to the engine.

Therefore, the auxiliary system is needed to replace the relevant components so that the engine can supply complete water cycle, fuel system, and so on.

PMC-STS pressure sensor can provide critical monitoring data in relevant measurement and control systems and auxiliary systems.

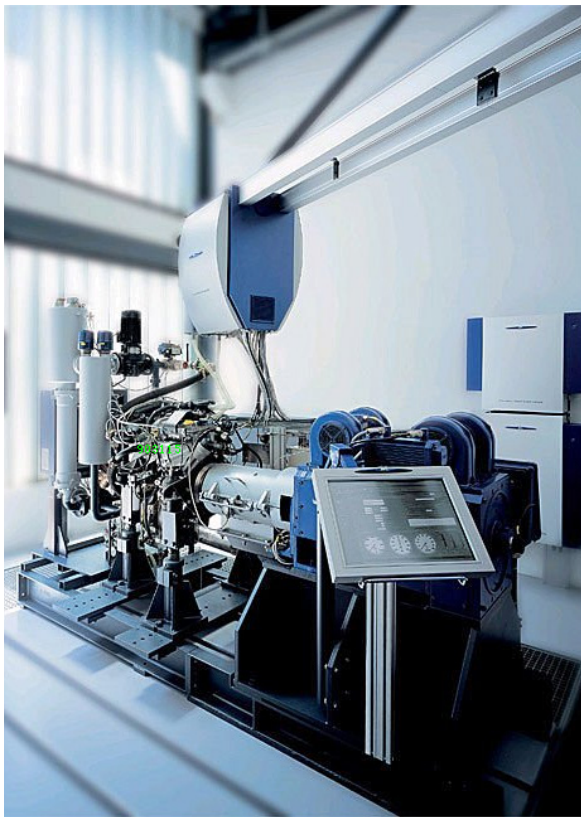
PMC-STS pressure transmitters are commonly used in engine testing industry and the required range as below:

1. Pressure Monitoring of Gas Channel System
- Inlet pressure x 1, normal range
- Compressor inlet and outlet pressure x 2, normal range
- Intercooler inlet and outlet pressure x 2, normal range
- Manifold internal pressure x 1, normal range
- Turbine inlet and outlet pressure x 2, normal range
- Exhaust back pressure x 1, normal range

2. Oil Line Pressure Monitoring
- Fuel inlet and outlet pressure x 2
- -15 tp 25 psi (for diesel engine)
- 0 to 100 psi (for gasoline engine)
- Oil Main Pipeline Pressure x 1

3. Water Pressure Monitoring
- Cooling water inlet and outlet pressure x 2

4. Crankcase Pressure Monitoring



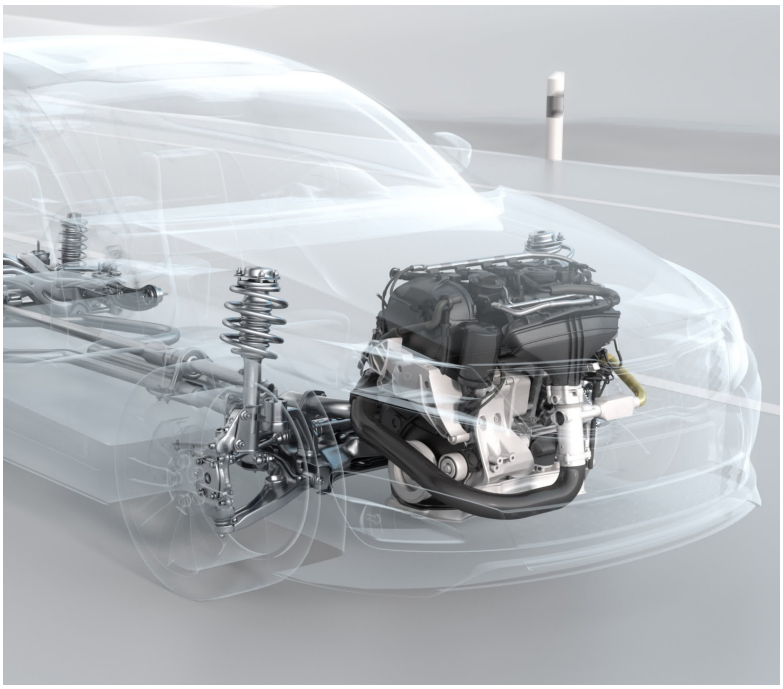
PMC-STS, Inc.' ML2000 sensor for pressure measurements displayed.

VEHICLE TESTING

Several components of commercial vehicles, such as engine, transmission, front and rear axles, are tested on the bench first, and then the performance and reliability of the whole vehicle is tested.

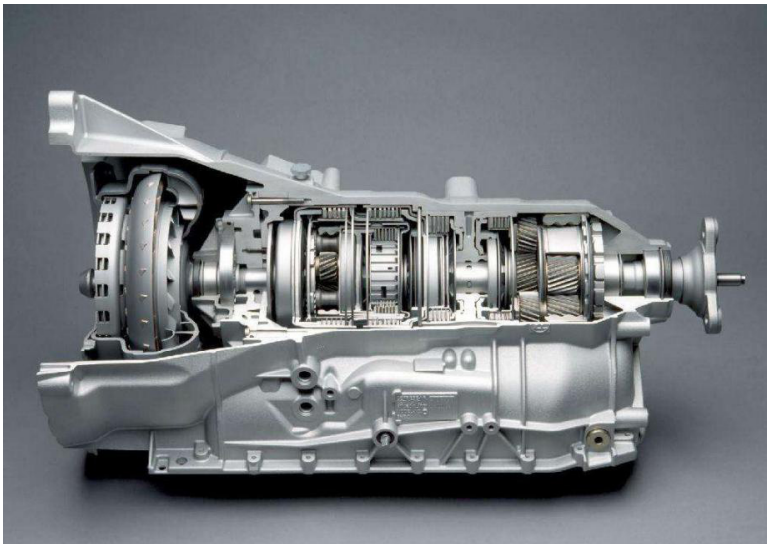
As the important parts of the vehicle, engine and transmission will also carry out cooling performance test, intake resistance and exhaust pressure test, cold start, heating test, three high (high temperature, high pressure, high cold) calibration test in the whole vehicle test link.

PMC-STS pressure sensors have temperature compatibility of -40 to 300°F, compact size, support IP67/ NEMA 4X protection level, ensure the smooth test of engine, transmission and so on.



Installed on the engine, such as air inlet pressure sensor, oil pressure sensor, cylinder pressure sensor, etc.

In order to control the opening and closing of automatic transmission clutch, it is necessary to accurately monitor and control the oil pressure of clutch opening and closing circuit in order to judge whether the clutch is controlled or not. Pressure sensors play the role of monitoring and feedback oil pressure in this process to inform the transmission control system whether the oil pressure value provided to the clutch is normal.

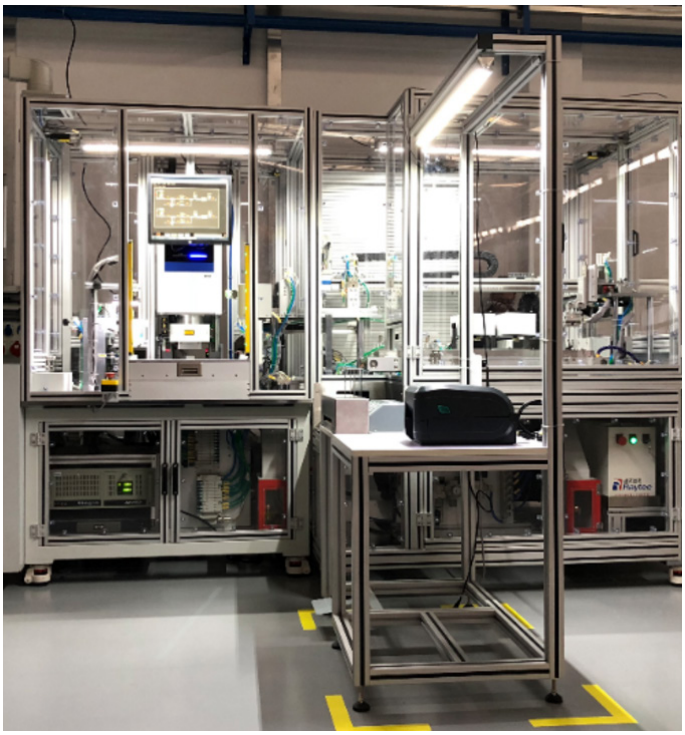


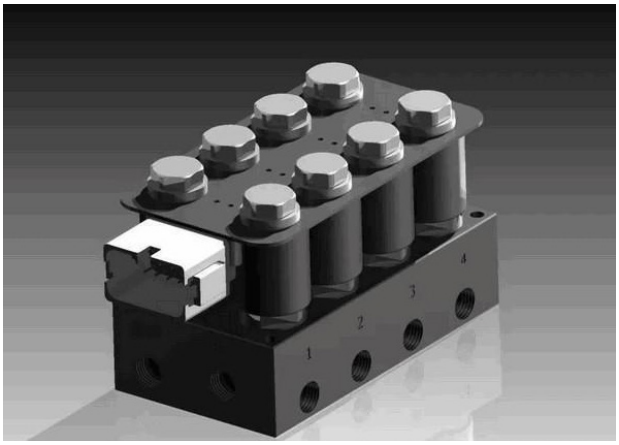
TEST BENCH FOR AUTOMOBILE PARTS

To test the important engine components of performance and reliability, the parts and components of different mechanisms in the engine include mechanical transmission AMT, oil pump, air pump, valve block, fuel tank valve, one-way valve, solenoid valve, intake manifold and other devices working in hydraulic and gas media. In order to ensure the overall reliability of the engine, it is necessary to carry out long-term tests on the material, structure, and working conditions of the important parts of the engine in the bench test.

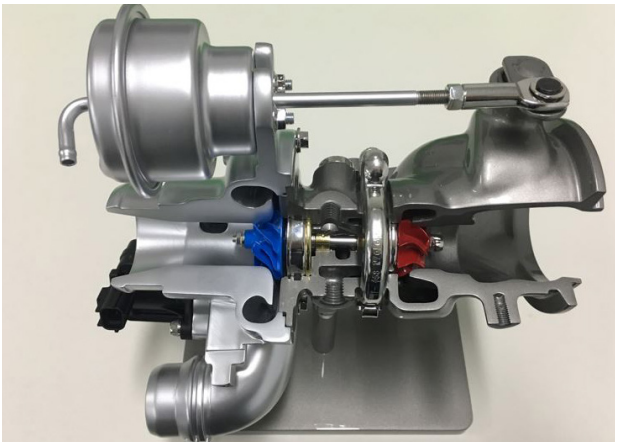
It is critical to verify the performance and reliability of relevant important components through a variety of sensors and professional instruments to achieve conventional pressure, leakage, and other performance testing.

PMC-STS high precision, high sensitivity, high stability pressure sensors are the perfect choice for customers.





Solenoid Valve Assembly



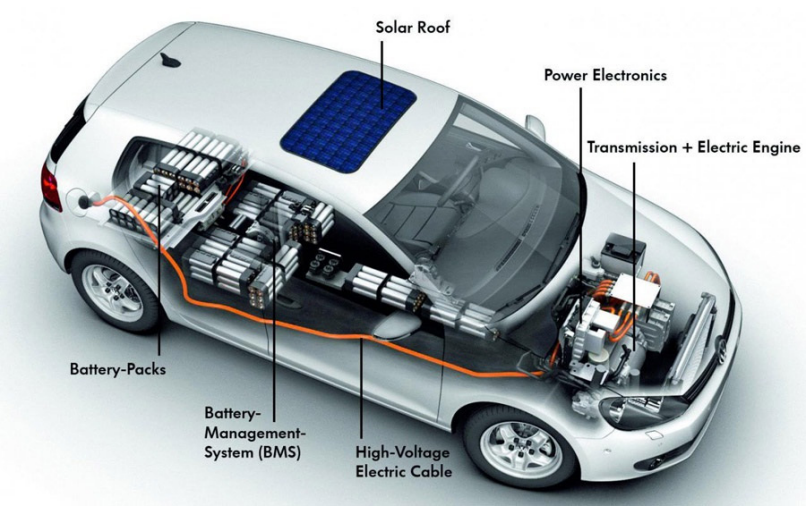
Turbocharger

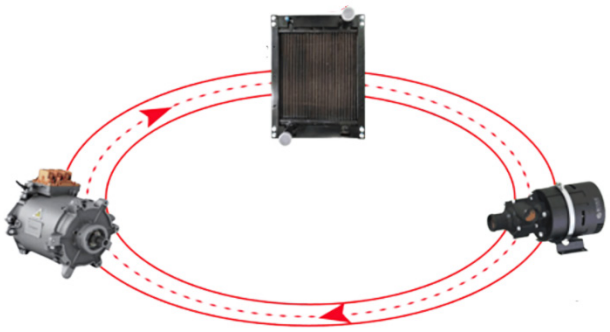
NEW ENERGY ELECTRIC VEHICLE

The suitable temperature of lithium batteries is about 10°C–30°C (50°F to 90°F), too high or too low temperatures will cause the rapid decay of battery life. The large-scale power batteries make the ratio of surface area to volume relatively smaller. The heat inside the batteries is not easy to dissipate, and the problems of uneven internal temperature and excessive local temperature that rise are more likely to occur, thus further accelerating the attenuation of the batteries, shortening the life of the batteries, increasing the life of the batteries, and the total cost for the end user.

Therefore, the water-cooling control system is very important for the continuous and efficient operation of the motor.

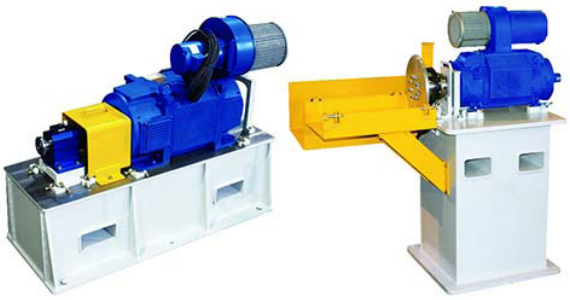
In the motor test system, the output power of the battery under different temperature conditions will be measured, and the refrigerant will flow in the constant pipe pressure under different temperature conditions. The output power and stability of the battery will be measured.



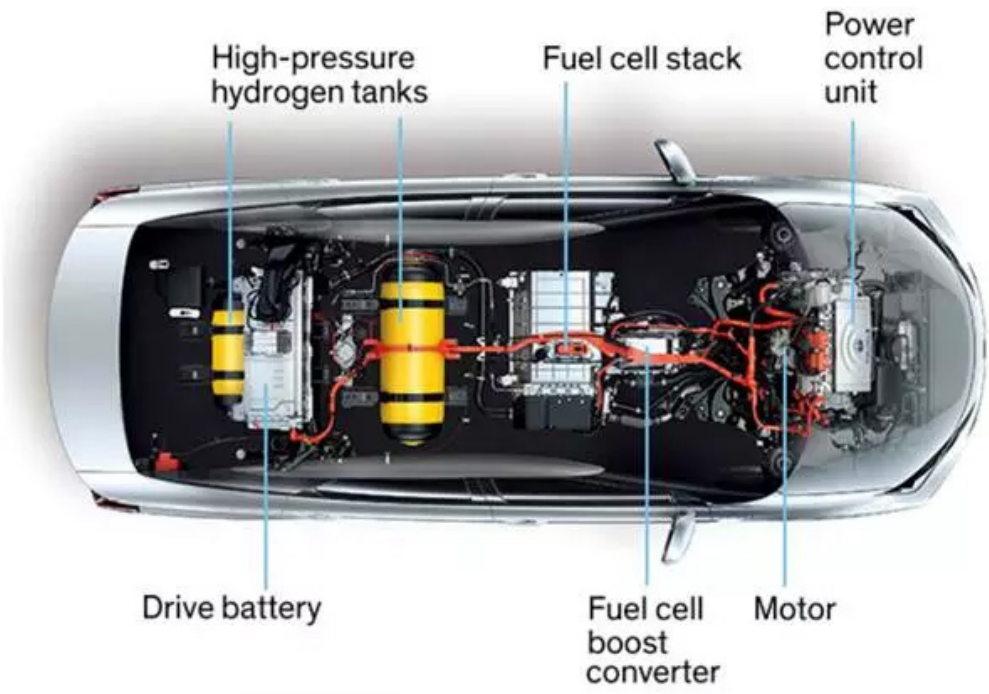


Graphic Expression for Water Cooling Motor

Electric Dynamometer



HYDROGEN-POWERED BATTERY CAR



A fuel cell is an efficient power generation device that directly converts chemical energy in fuel such as hydrogen, natural gas, and oxidant into electric energy without combustion process.

Fuel cell stack is the core component of hydrogen-fueled vehicle, so it is necessary to test the sensitivity and life of fuel cell stack. It is necessary to measure the pressure of air/hydrogen/coolant in the test process. The PMC-STS pressure sensor is made of 316L material and has good medium compatibility. The precision of ATM.1ST series products is 0.1% FS. The temperature range - 40°C – 150°C (-40°F to 300°F) is also very suitable for this kind of test bench.

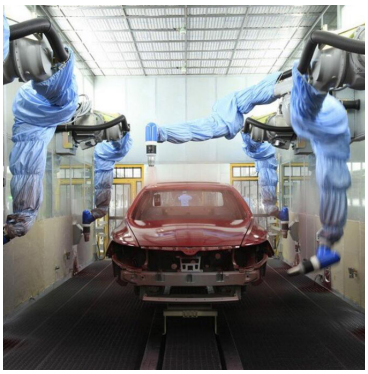
Hydrogen Fuel Cell Testing System

PMC-STS ADVANCED PRESSURE SENSOR TECHNOLOGY COVERS THE ENTIRE TESTING AND MEASUREMENT INDUSTRY

Aerospace

Satellite

Rail Transportation



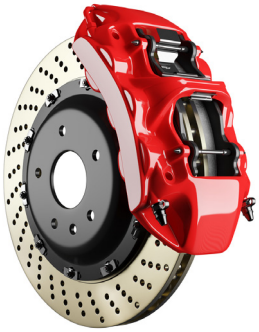
Coating

Leakage equipment

Production line

Hydraulic Testing

Steering test system



Brake system

PRESSURE TRANSMITTERS CAN BE CUSTOMIZED ACCORDING TO CUSTOMER APPLICATION REQUIREMENTS

In the process of product development, we always follow the principle of modular design. So we can produce customized products according to your needs in a short time. Delivery of your test and measurement project or equipment under development can be achieved on schedule.

Customers Can Benefit From Our Modular Design

Multiple Process Connections Are Available

We have a variety of threaded interfaces for customers to choose from. To avoid potential leakage risk and occupy more installation space when customers use threaded adapters.

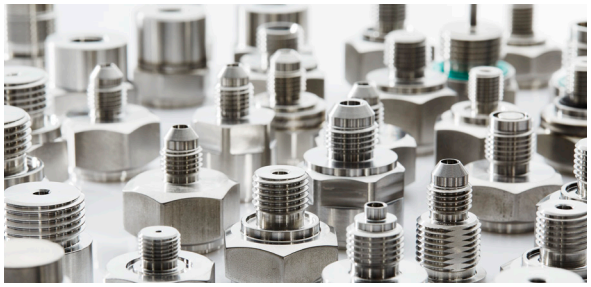
The Measurement Range Can Be Customized According to Application Requirements.

PMC-STS Pressure Sensors provide ultra-high accuracy and precision to meet your customized needs.

	ATM.1ST & ATM.1ST/T	ATM/T	ATM.Mini
			
Pressure Range	0-1 psi 0-20,000 psi	0...100 mbar -1...1000 bar	0...1 bar 0...100 bar
Static Accuracy	≤ ± 0.05/0.1% FS	≤ ± 0.1/0.25/0.5% FS	≤ ± 0.01/0.2% FS
Response Time	< 1 ms/10...90% FS	< 1 ms / 10...90% FS	< 1 ms/10...90% FS
Operating Temperature Range	-40 to 125 °C (-40 to 260°F)	-25 to 85 °C (-15 to 185°F)	-40 to 125 °C (-40 to 260°F)
Compensated Temperature Range	-40 to 150 °C (-40 to 300°F)	-40 to 150 °C (-40 to 300°F)	-40 to 125 °C (-40 to 260°F)

3-6 Weeks From Order to Delivery

As a leading manufacturer of professional pressure measurement technology, we can provide professional solutions according to your requirements in a short time.

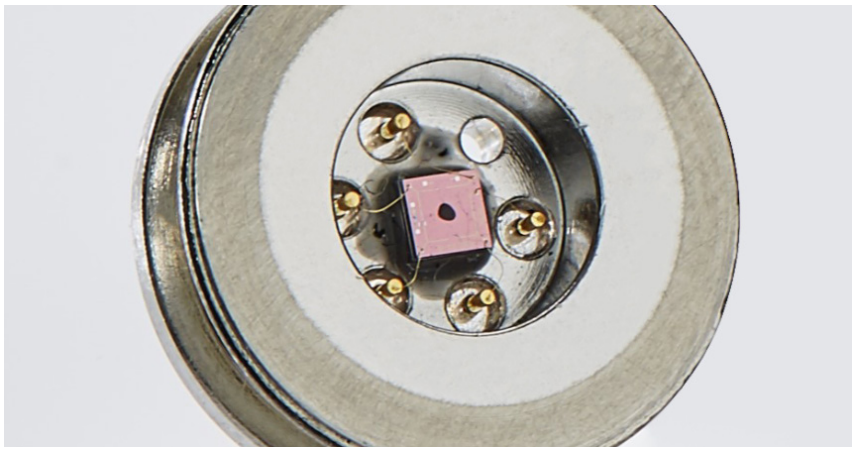


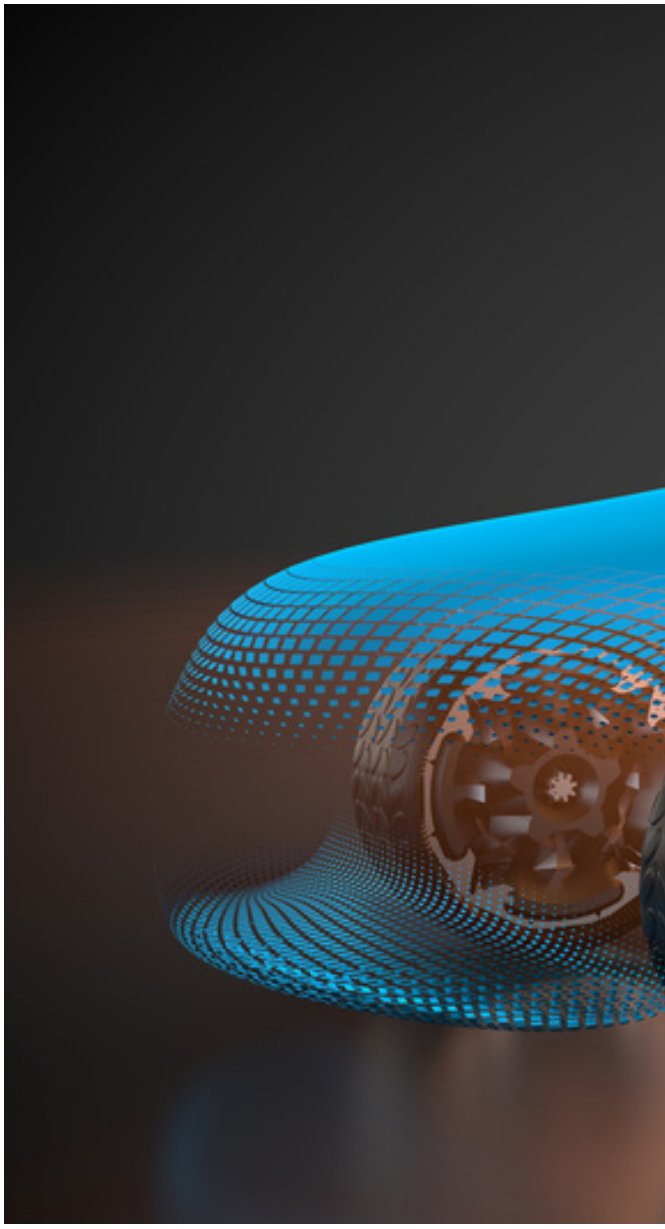
Selection of Multiple Materials and Optimum Matching Scheme

According to the medium difference in different applications, PMC-STS provides more choice of shell and sealing materials (such as stainless steel, titanium or Hastelloy) to ensure the service life of products.

	DTM.OCS.S	ML2000	ML3000
			
Pressure Range	0...200 mbar 0...100 bar	0 – 2.5 psi 0 – 6000 psi	0 to 1 bar (0 to 15 psi) 0 to 400 bar (0 to 6000 psi)
Static Accuracy	≤ ± 0.03/0.05/0.15% FS	±0.2% FS Combined Nonlinearity, Repeatability, and Hysteresis (Standard) ±0.1% FS and ±0.08% FS Available	± 0.01 FS
Response Time	10ms	<1ms/10...90% FS	<1ms/10% to 90% FS
Operating Temperature Range	-40 to 85°C (-40 to 185°F)	-40 to +300°F (-40 to +150°C)	-40 to 150°C (-40 to 300°F)
Compensated Temperature Range	-40 to 85 °C (-40 to 185°F)	-40 to +255°F	-40 to 150°C (-40 to 300°F)

Coming Soon





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