



Intelligent Monitoring Solutions to Industrial Gases

Pressure measurement and monitoring technology used on the production and storage of industrial gases, products, and cases

INTELLIGENT MONITORING
SOLUTION FOR INDUSTRIAL
GASES MEASURING

MICROSENSOR

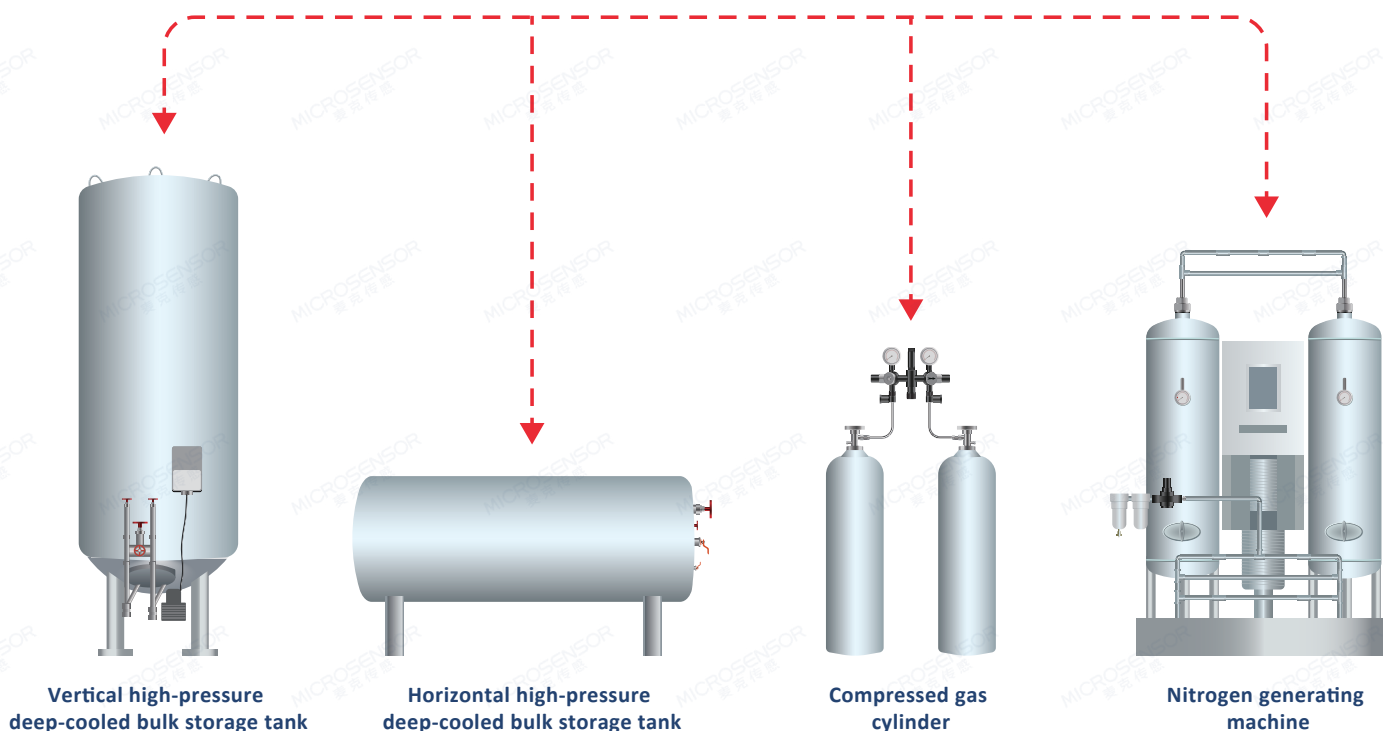
Application Of Industrial Gas Monitoring



Industrial gases include nitrogen, oxygen, carbon dioxide, argon, hydrogen, helium, and acetylene, etc. They are the basic raw materials of modern industry which are in gaseous state at room temperature and pressure. They are widely used in many industries such as metallurgy, steel, petroleum, chemical, electronics, medical, environmental protection, glass, building materials, construction, food, beverage, and machinery. The dangerous nature of gas leads to high requirements of its production, container handling, storage, and transportation technology, etc.

Through various pressure transmitters, differential pressure transmitters and other sensing and monitoring instruments, the pressure value during the operation of industrial gas production, storage, supply, and use is monitored in real time. The automatic monitoring and adjustment of gas production equipment and storage tanks are realized through the supporting system. Keeping the pressure value within the normal range through this is an important step to ensure safe production, optimize the process management and improve the automation level.

N₂ O₂ CO₂ Ar H₂ He C₂H₂



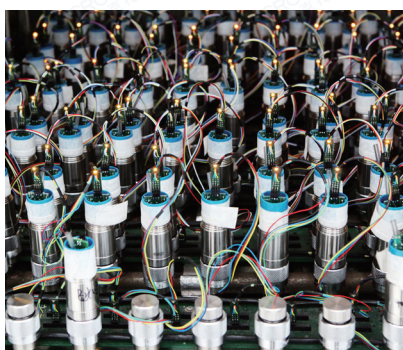
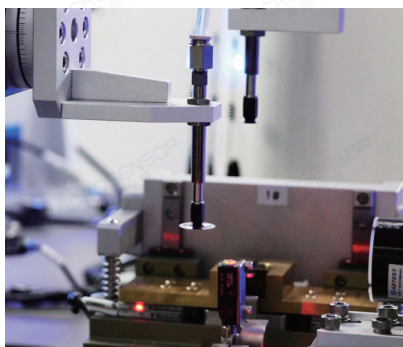
Applicable Products of Industrial Gas Monitoring

Product	P/N	Range	Accuracy	Working Temperature	Output signal	Media Compatibility
Pipe-mounted Pressure Transmitters	MPM489FL	-100kPa... 0kPa~10kPa... 30MPa	$\leq \pm 0.5\%FS$	-30°C~80°C -20°C~60°C (Intrinsic safe version with cable connection) -30°C~60°C (Intrinsic safe version with DIN connection) -20°C~60°C (Flameproof version) -10~70°C (Cable connection)	4mA~20mA DC (2-wire) 0/1V~5V/10V DC (3-wire) 0.5V~2.5V/4.5V DC (3-wire)	
Differential Pressure Transmitter	MDM4901FL	0-35kPa... 0-3.5MPa	0.5±%FS	-30~80 -10~70 (Cable connection)	4mA~20mA DC (2-wire) 0V~5V DC (3-wire)	nitrogen, oxygen, carbon dioxide, argon, helium, and acetylene, etc
	MDM4902FL	0kPa~150kPa	±0.5%FS	-40°C ~85°C	I2C	
	MDM3051S-DP	0-100Pa ~ 1kPa ... 0-30kPa ~ 3MPa	±0.075% (Total error band)	-40°C ~85°C	4mA ~ 20mA DC; HART	

*For specific product specifications, see the datasheets.

Advantages

Features



High Reliability

Micro Sensor has decades of technology accumulation insensing and measurement field with rich experience in the field of tank level monitoring. Micro Sensor is capable to provide instruments of high accuracy and stability, which can meet the pressuremonitoring of the gas storage tanks completely.



Strong Applicability

Micro Sensor's transmitters can meet the measurement requirements of different gas media, such as oxygen, hydrogen, and other gases with special requirements of the sensor's material and technical requirements. The products are with corrosion resistance, leak-proof, etc., can work in a variety of media and working conditions with stronger applicability.



Easy Installation

The compact design of the transmitters makes them easy to install, operate and maintain. They are made of high-quality material and have fully sealed integrated structure, which makes the product more durable.

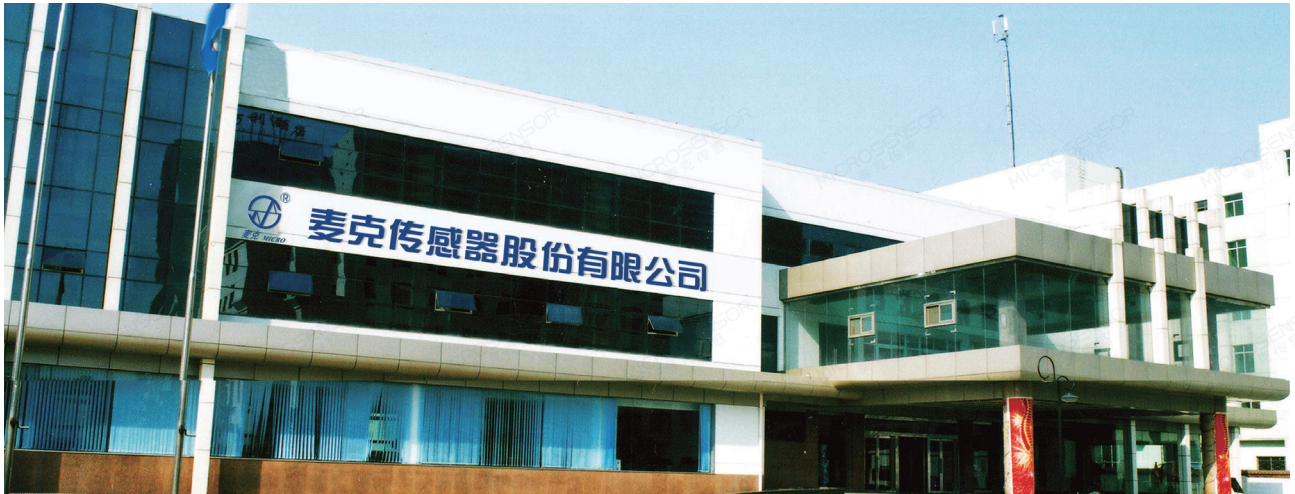


Multiple Certification

Micro Sensor's products have been certificated with CE, ATEX, ROHS, SIL, CCS, explosion-proof certificate, etc.



Micro Sensor Co., Ltd. -Your Partner of Sensing and Measuring



Company Strengths

◎ state-of-the-art Technology

Micro Sensor has decades of experience in the design and manufacturing of diffused silicon pressure sensors, and has built the fully automated production line. The company takes up with state-of-the-art manufacturing technology, and select materials to provide our customers with high quality and great value products.

◎ Approvals

ISO9001 QMS certificate, CE, RoHS, ATEX, DNV·GL and other approvals

◎ Attentive Service and Quality Products

Micro Sensor has more than 16,000 customers worldwide and its products are exported to more than 100 countries in Europe, America, Australia, Africa, Southeast and Asia.

◎ Tailored Solutions

Micro Sensor owns four product lines: sensors, transmitters, flow meters, and IoT products. They are widely applied in the industrial control, smart manufacturing, smart cities, precision machinery, chemicals and other areas for many years. Customized sensor solutions also are available regardless of the diversified requirements.

About Micro Sensor

Micro Sensor Co., Ltd. ("Micro Sensor" for short), as a leading representative of China's semiconductor piezoresistive pressure sensor industry, has decades of experience in the design, development, and manufacturing of the diffused silicon pressure instruments. Its products include pressure sensors, transmitters, flow meters, temperature meters, IoT acquisition and transmission terminal, which are exported to more than 100 countries and regions around the world. It is committed to provide customers with high quality, reliable sensing and monitoring solutions including the customized ones in the areas of industrial control, smart manufacturing, smart cities, and chemical industry.



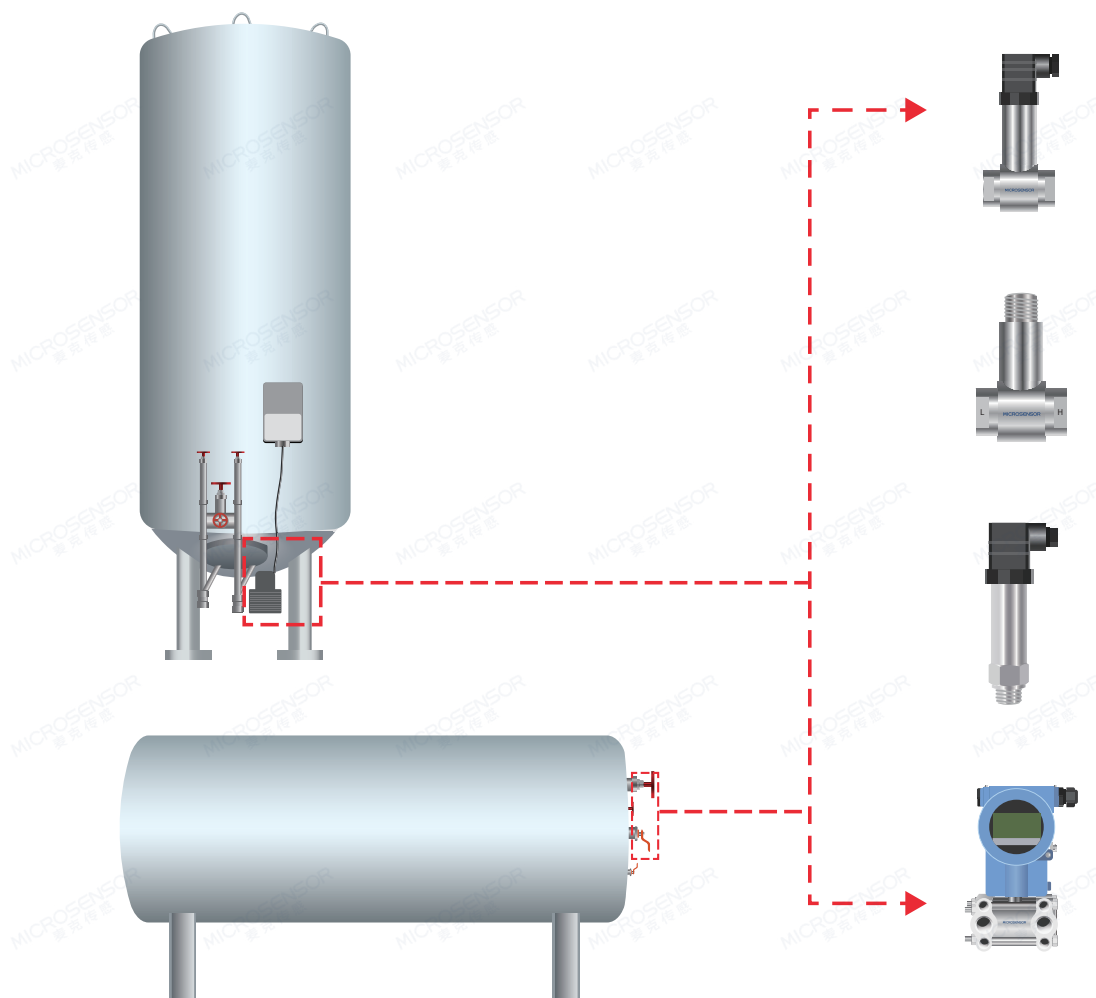


Vertical/ Horizontal High-pressure Deep-cooled Bulk Storage Tank

Measuring instruments in Bulk Cryogenic Tank Level Monitoring are used to measure the level of cryogenic liquified gases.

Differential pressure measurement is a simple and reliable way to monitor the liquid level in cryogenic gas tanks. These sensors work by measuring the pressure at both top and bottom of the tank and calculating pressure difference of two ends. The resulting value indicates the pressure of the cryogenic liquified gas which is finally converted to precise level value.

Additionally, the pressure sensor may be an option which used for indicating the Absolute pressure of the tank and the pressure before and after the cryogenic pump.



Vertical/Horizontal High-pressure Deep-cooled Bulk Storage Tank

Popular Products for This Application:

MDM4901FL Oxygen Measurement Differential Pressure Transmitter

This model is a piezoresistive differential pressure sensor with diffusion silicon, using stainless steel 316L isolation diaphragm. The product is internally filled with fluorinated lubricants, which has better stability and can effectively prevent the oxidation of the diaphragm by gas.



MPM489FL Pressure Transmitter

This model adopts "oil-free" production process with internally filled with fluorinated lubricants. It can be used to measure gauge pressure, absolute pressure, and sealed gauge pressure, with short circuit protection and reverse polarity protection. It is easy to use with safe and reliable performance.



MDM4902FL I²C Digital Output Differential Pressure Transmitter

This model is a piezoresistive differential pressure sensor with diffusion silicon, using stainless steel 316L isolation diaphragm. The product is internally filled with fluorinated lubricants, which has better stability. It features wide working temperature range, high accuracy, stable performance, and easy adjustment. The standard I²C digital protocol is easy for docking and expansion.



MDM3051S-DP Intelligent Differential Pressure Transmitter

This is a differential pressure transmitter with high precision and stability. This transmitter has a wide range and intelligent output. It can be used to measure liquid level, density, pressure and flow measurement of gas, steam, and other media.



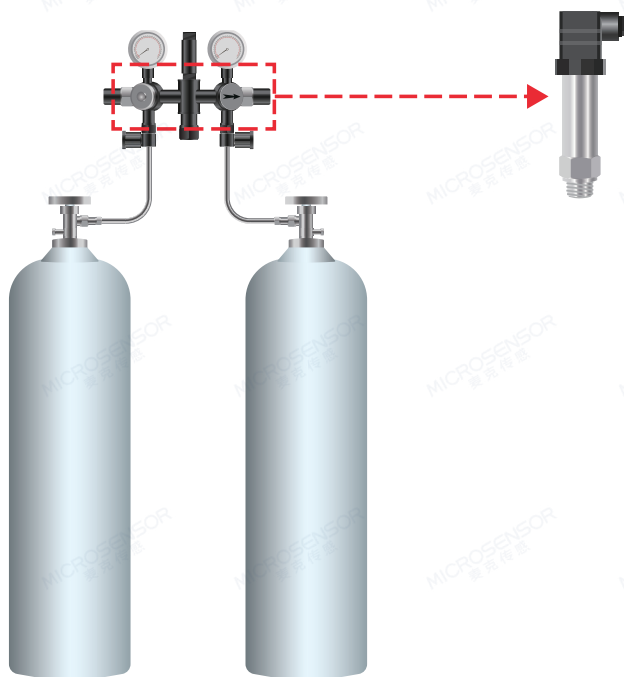


Compressed Gas Cylinder

Pressure Transmitter in Gas Cylinder Monitoring is used to monitor the pressure of gas supply line and gas supply tank.

Pressure transmitters are responsible for pressure monitoring in gas cylinders and for providing signal output to indicate low tank pressures in system critical applications to ensure gas cylinder safety. Pressure transmitters are also integrated in a PLC warning system to actively monitor pressure of cylinder to automatically control the switchover manifold. In other case, the pressure transmitter connects to telemetry gateway which is responding for indicating the pressure of cylinder to prevent the stockouts and leak of gas cylinders.

For medical Oxygen gas, the pressure transmitters have to be cleaned for Oxygen service. In addition, the oil isolated in pressure sensor shall be fluorinated lubricants which is compatible with Oxygen.



Popular Products for This Application:

MPM489FL Pressure Transmitter

This model adopts "oil-free" production process with internally filled with fluorinated lubricants. It can be used to measure gauge pressure, absolute pressure, and sealed gauge pressure, with short circuit protection and reverse polarity protection. It is easy to use with safe and reliable performance.



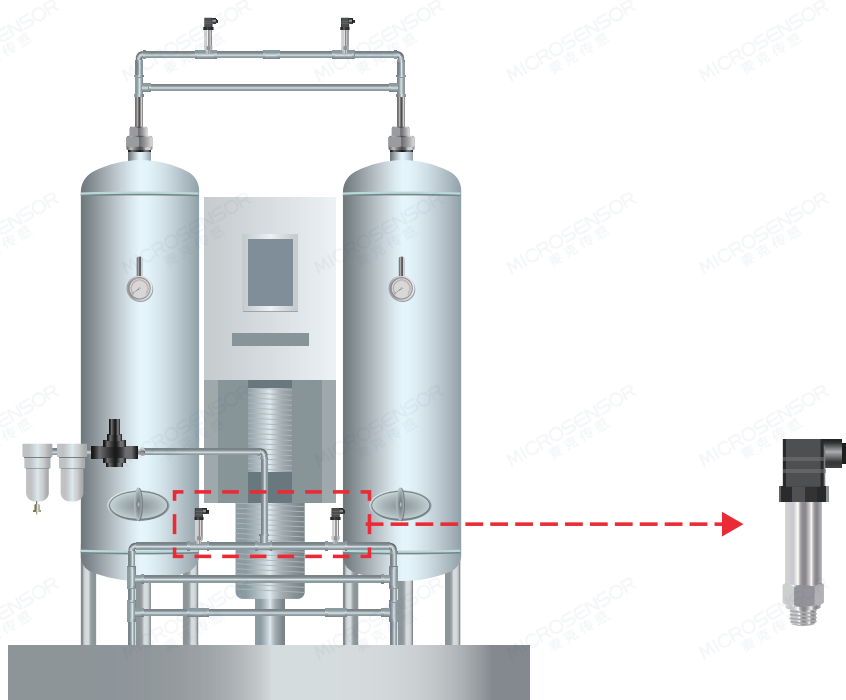


Nitrogen Generator/Oxygen Generator

Nitrogen and Oxygen generators are alternative solution of producing Nitrogen and Oxygen for direct use instead of storing Nitrogen and Oxygen in high pressure cylinders.

Nitrogen and Oxygen produced by generators are used for electronics, health care, air-conditioned cold storage, or the beverage industry.

Pressure transmitters in generators are used to monitor the pressure swing absorption process and the pressure inside the vessel.



Popular Products for This Application:

MPM489FL Pressure Transmitter

This model adopts "oil-free" production process with internally filled with fluorinated lubricants. It can be used to measure gauge pressure, absolute pressure, and sealed gauge pressure, with short circuit protection and reverse polarity protection. It is easy to use with safe and reliable performance.





Application Case:

Project Overview:

A top manufacturer of industrial gas and chemicals

Project Requirements/Key-point:

To measure the level of the liquified gas which stored in different cryogenic bulk. Especially for Oxygen bulk, the wetted part of the transmitter has to be cleaned to ensure the whole product are without oil.

Solution:

Oxygen cleaned differential pressure transmitter isolated with Fluorinated oil which is compatible with Oxygen.

Popular Products for This Application:

MDM4901FL /MDM490



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