



# Industrial Storage Tank Level Monitoring Solution

Level measurement and monitoring technology used on the industrial storage tank, products and cases

LIQUID LEVEL SENSING  
AND  
MONITORING TECHNOLOGY

**MICROSENSOR**  
麦克传感

# Industrial Storage Tank

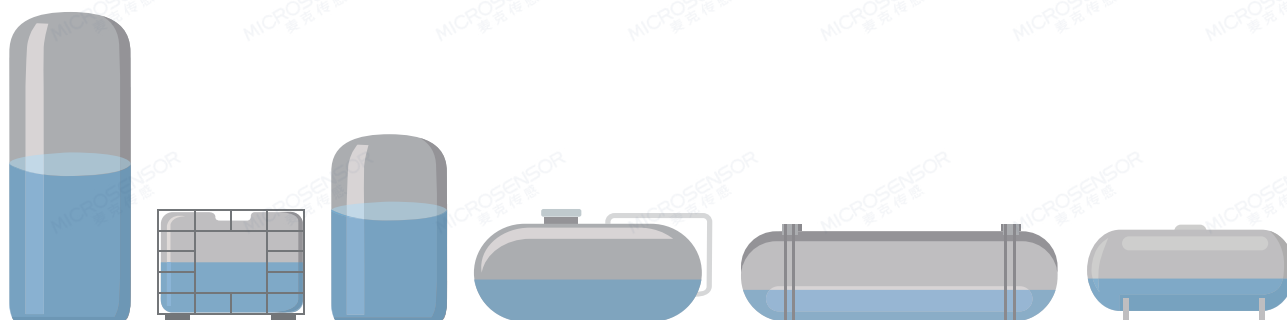


Industrial storage tanks are used as storage containers for various liquids such as fuels, chemicals, lubricants, pesticides, and water etc. It is an important part of the production, storage and distribution process. The real-time monitoring of tank liquid level has a significant impact on how to achieve the optimal management of when such products are produced and how they are delivered.

There are many tools and methods for the measurement of tank liquid level, and the remote monitoring using various digital sensors is the most accurate and reliable choice.

A simple and reliable remote tank level monitoring system can be built by connecting the level monitoring instruments such as submersible level transmitters, pressure transmitters, non-contact ultrasonic and radar sensors, and ultra-high-precision magnetostrictive level gauges with a remote terminal equipment. It can continuously monitor the operation process and make adjustments to keep the liquid level at the required height and helps in the smooth operation of production, improving production efficiency, reducing personnel costs, and upgrading the automation management level of the production process.

- **Large Bulk Storage**
- **IBC tank/totes**
- **Mini-Bulk Storage Tanks**
- **Above Storage Tanks**
- **Underground Tanks**
- **Horizontal Storage Tanks**



# Applicable Sensors

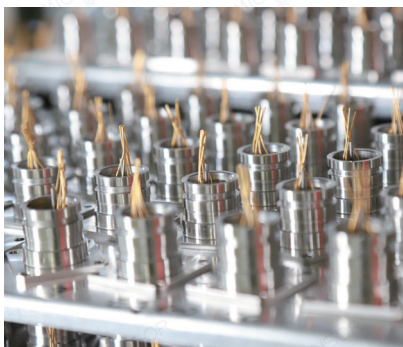
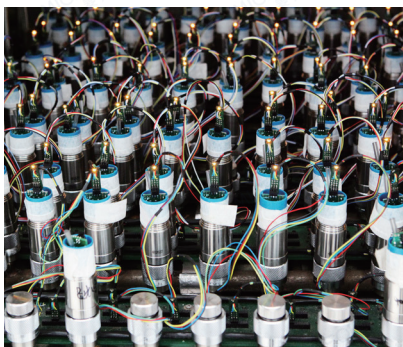
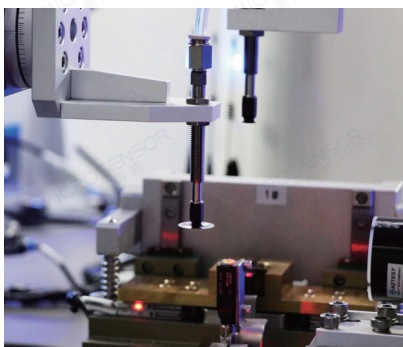
Sensor	P/N	Range	Accuracy	Working Temperature	Output signal	Media Compatibility	Measurement Technology and Application
Differential Pressure Transmitter	MDM3051S Intelligent Differential Pressure Transmitter	0-100Pa ~ 1kPa ... 0-30kPa ~ 3MPa	±0.075% (combined accuracy)	-40°C ~ 85°C	4mA ~ 20mA DC; HART	Fluids that are compatible with PTFE, SS316L, Titanium tantalum(membrane and process connection material)	Level is measured by calculating the pressure difference between the tank top and bottom level, suitable for level measurement of sealed tanks
Magneto-strictive Level Sensor	MLM Level Transmitter	Rod-type 50mm ~ 5000mm; Flexible-cable type 4000mm ~ 20000mm	< ±0.05%FS, (Max. error 150um for level less than 300mm)	-40°C ~ 85°C	4mA ~ 20mA DC; 0~5V DC; RS485-MODBUS_ RTU	Fluids that are compatible with SS316L and PTFE, including water, fuel, chemicals and other particle-free and gel-free liquids	Mounted inside the tank and monitor the level height via the interior magnet waveguide, suitable for the large storage tank level monitoring of wide range
Submersible Level Transmitter (Hydrostatic)	MPM489W Level Transmitter	0 ~ 1/2/5/ 10/20/ 50/100/ 200mH <sub>2</sub> O	±0.5%FS	-10°C ~ 70°C	4 ~ 20mA DC 0 ~ 5V/10V DC 0.5V ~ 4.5V	Fluids that are compatible with PTFE, SS316L, Titanium tantalum (membrane and process connection material)	Suitable for the open tanks or tanks with vent holes and open to the atmosphere
	MPM426WPF Level Transmitter	0 ~ 1/2/ 3.5/5/ 10/20/ 35mH <sub>2</sub> O	±0.5% FS ( > 3.5mH <sub>2</sub> O)	-20 ~ 60°C	0.5V ~ 4.5V DC		
	MPM426WPC Level Transmitter	0 ~ 1/2/ 3.5/5/ 10/20/ 35mH <sub>2</sub> O	±0.5% FS ( > 3.5mH <sub>2</sub> O)	-25 ~ 80°C	0.5V~4.5V DC, Temperature signal		
Straight Pressure Transmitters	MPM489 Pressure Transmitter	-100kPa...0kPa ~ 10kPa...100MPa	≤±0.5% FS	-30°C ~ 80°C	4mA ~ 20mA DC 0/1V ~ 5V/10V DC 0.5V ~ 2.5V/4.5V DC	Fluids that are compatible with PTFE, SS316L, Titanium tantalum (process connection material)	Side-mounted at the tank bottom
	MPM4730 Pressure Transmitter	-100kPa...0kPa ~ 10kPa...100MPa	±0.075%FS (min.) ±0.15%FS (typ.) ±0.25%FS(max.)	-30°C ~ 80°C	4mA ~ 20mA DC; RS485-MODBUS_ RTU		
Non-contact Level Sensor	LR725 Ultrasonic Level Meter	0m ~ 2m, 4m, 6m, 8m, 12m, 15m, 20m	±0.2%FS	-40°C ~ 75°C	4mA ~ 20mA DC; RS485-MODBUS_ RTU	Suitable for corrosive fluids	Suitable for high range sealed tank level monitoring and non-contactable fluids
	LKZLD Smart Radar Level Meter	High-frequency Radar 26GHz [0 ~ 70m]	±3mm	General Type(-40 ~ 130)° C High-temperature Type (-40 ~ 250)° C	4-20mA/Hart/ RS485-Modbus		

\*For specific product specifications, see the datasheets.



# Advantages

## Features



### Good Reliability

Micro Sensor has decades of technology accumulation in sensing and measurement field, and has gained rich experience in the area of tank level monitoring. Micro Sensor is able to provide instruments of high accuracy and stability, which can meet the pressure and level monitoring of the industrial storage tanks completely.



### Great Applicability

Micro Sensor provides different pressure and level transmitters featured with excellent anti-corrosive and low-temperature resistant performance, applicable for various media under different working conditions.



### Easy to Install

The products are easy to install, operate and maintain. They are made of high-quality material and have fully-sealed integrated structure, which make the product durable.

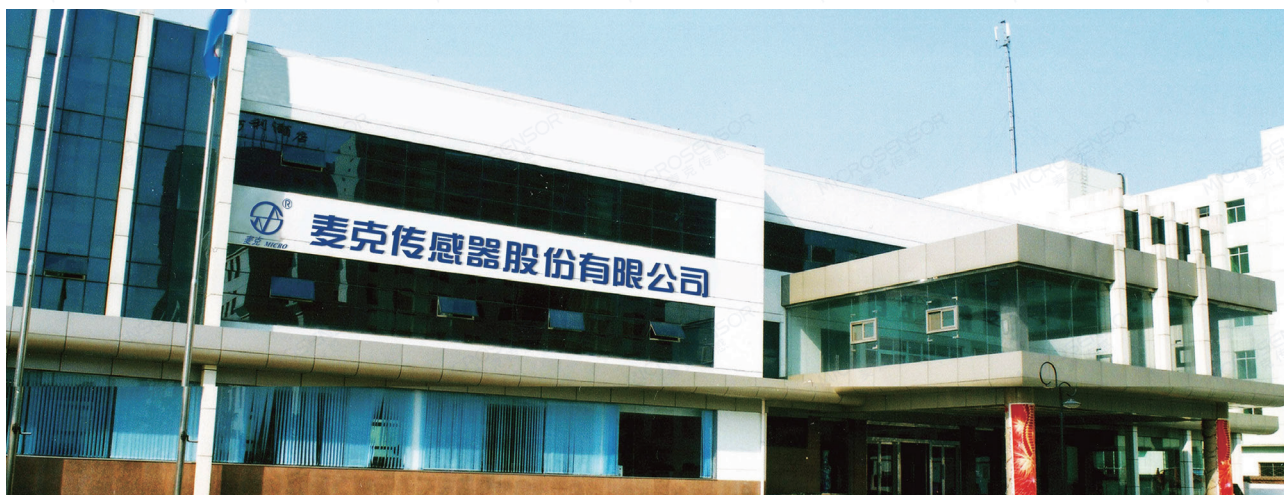


### Certificates We Have

Micro Sensor has a number of certification, including 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.

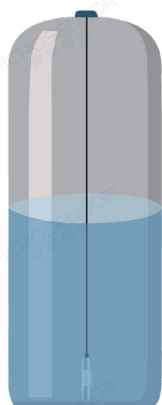




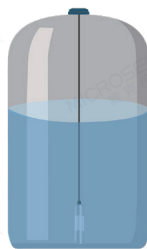


## Large Bulk Storage Tank/Micro-bulk Storage Tank/Above Storage Tank

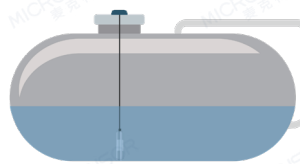
Hydrostatic level measurement is based on the principle that the Hydrostatic is proportional to the height of the liquid. Hydrostatic submersible pressure level transmitter is the most commonly used level measurement sensor for the tank level monitoring. It is usually used for medium and large storage tanks that are connected to the atmosphere and can be connected to remote data terminals through cables. The product is easy to install, accurate in measurement and reliable in performance.



Large Bulk Storage Tank



Micro-bulk Storage Tank



Above Storage Tank

## Hydrostatic Level Transmitters

### MPM489W Level Transmitter

Constructed with the stainless steel material all sealed, the level transmitter is suitable for the measurement of various media.

### MPM426WPC Level Transmitter

Featured with excellent anti-corrosion capability, mainly suitable for the measurement and control of the chemical fluids.

### MPM426WPF Level Transmitter

All-welded construction, suitable for the measurement and control of petrochemicals.



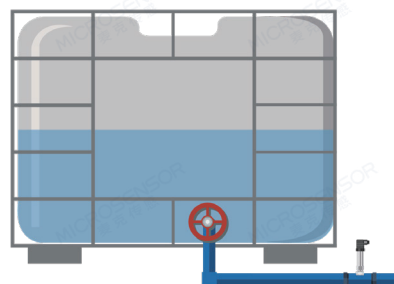


## IBC tank/totes | Horizontal Tanks

Hydrostatic pressure transmitter is also based on the principle that the Hydrostatic is proportional to the height of the liquid. It is usually used for IBC and Horizontal storage tanks that are connected to the atmosphere and mounted at the bottom of the tanks. The product is easy to install, accurate in measurement and reliable in performance.



Horizontal Tank



IBC Tank/Totes

## Hydrostatic Pressure Transmitters

### MPM489 Pressure Transmitter

Diffused silicon piezoresistive pressure transmitter supports Zero and FS output adjustment and is available for gauge pressure, absolute pressure and sealed gauge pressure measurement. It has been certified by CE, RoHs, ATEX and other certificate authorities. The product meets the customized requirements and can be widely used in many applications.



### MPM4730 Pressure Transmitter

This high-precision, high-stability intelligent pressure transmitter is suitable for the precise measurement of fluid pressure in various industries.

- Capable to operate with  $-30^{\circ}\text{C} \sim 80^{\circ}\text{C}$ , applicable for variety of fields
- 2-wire  $4 \sim 20\text{mA}$  analog signal, RS485/HART digital signal optional





## Underground Tanks

The magnetostrictive liquid level transmitter uses the principle of magnetostriction, and senses the level of fluid in the vessel by detecting the level of the magnets contained within the float, and then transmits the measurement back to the control system. Generally, it is installed inside the tank through an existing nozzle on the top of the tank, which meets the long-term measurement of the underground storage tanks and large storage tanks. Featured with the high accuracy, easy installation, and capability to measure at multiple liquid levels and at multiple temperature points, it has strong environmental applicability.



Underground Storage Tank

## Magnetostrictive Sensor Options

### MLM Level Sensor

Featured with high accuracy and stability, the new generation of magnetostrictive level transmitter can measure the level at multiple positions and temperature points simultaneously. With strong anti-pollution ability, it is suitable for harsh industrial environments. It can be widely used in the liquid level measurement and control of various liquids tanks in the area of petroleum, hydraulics, pharmaceutical, food, beverage.

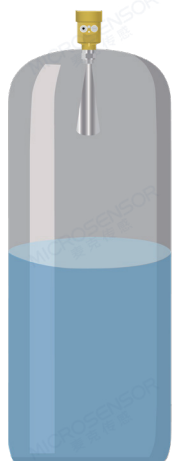






## Large Bulk Storage Tank/Micro-bulk Storage Tank/ Horizontal Storage Tanks / Above Storage Tank

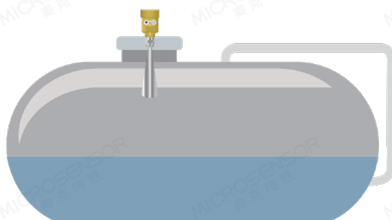
The ultrasonic and radar level gauges use the principle of ultrasonic and radar reflection to measure the tank level, which can be widely used for level monitor of large, middle and small sized sealed or open tanks. Since it does not contact with the measured media, it can be used in a variety of complex working conditions, such as corrosive, non-contactable media. Featured with the high accuracy, easy installation and maintenance, it has strong environmental applicability.



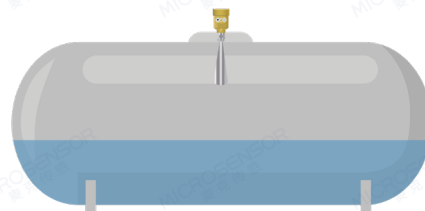
Large Bulk  
Storage Tank



Micro-bulk  
Storage Tank



Above Storage Tank



Horizontal Storage Tanks

Note: LR725 Ultrasonic Level Meter and  
LKZLD Radar Level Meter use the same mounting method

## Non-contact Level Meter Options

### LKZLD Intelligent Radar Level Meter

Non-contact radar measurement, featured with no wear, no pollution, no corrosion, and can be safely applied to various metal and non-metal containers.

It has smaller measurement blind zone and works well for the small sized tank measurement. It can be widely used in reservoirs, dams, coal plants, power plants, petrochemicals, and general industries.



### LR725 Ultrasonic Level Meter

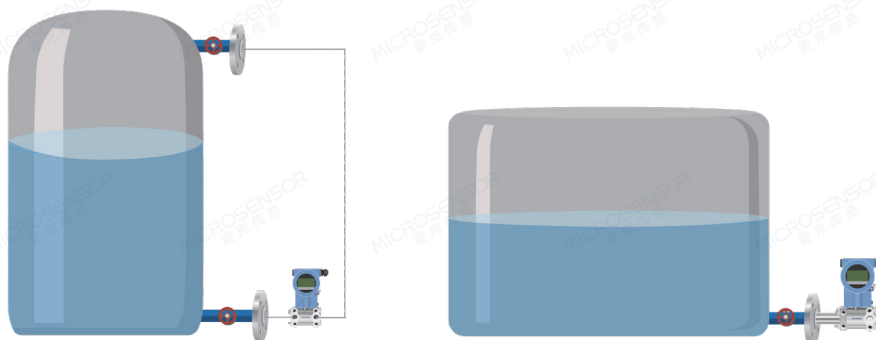
Based on ultrasonic distance measure technology, it can be applied to the measurement of corrosive media, inaccessible media and other harsh working conditions. It has been widely used in tap water, sewage, petroleum, chemical, metallurgy, power, food, pharmaceutical, paper, mining and other industries for continuous level measurement and real-time control.





## Sealed Tank/ Large Storage Tank/Micro-bulk Storage Tank

Differential pressure transmitter is used to determine the level height inside a pressurized tank by measuring the difference in pressure between the bottom and top of the tank. Generally, it is applied to the level height measurement of the sealed tanks or tanks with vent holes, featuring high accuracy, excellent performance and great long-term stability.



DP Transmitter Mounting

## DP Transmitters

### MDM3051S Smart Differential Pressure Transmitter

Featured with high-precision, high operation temperature, the products are mainly used in process control of petroleum, chemicals, food and pharmaceutical industries.





## Application Cases

With the leading sensor technology, superb quality products and service, Micro Sensor provides the customized solutions for a number of petroleum and chemical industrial clients.



### Huawei Base Station Project

Micro Sensor supplies fuel level sensors for the diesel generators to get real-time monitoring of the diesel level in the tank and ensure the normal power supply of the generator so that the base station can run safely and smoothly.



### Petro China Project

Micro Sensor supplies level sensors for various oil storage tanks for real-time monitoring of the tank level height to ensure the timeliness, accuracy and efficiency of measurement, to keep the oil tank level at the required height, and to facilitate the oil depot automated information management.



### North America Gas Station Project

Micro Sensor supplies level monitoring solution for the largest fueling station equipment supplier in the North America, including the fuel level monitoring of underground storage tank, which helps the decision maker get access to storage tank level data in real time, thereby improves the efficiency and productivity.



# Your Partner of Sensing and Measuring

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