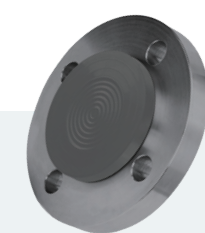


Diaphragm Seal System

The MDM7000 Diaphragm Seals provide reliable measurement of pressure, level, mass, density, interface, and flow. The system is engineered for complex process conditions, including high temperature, high vacuum, corrosive media, suspended solids, or highly viscous fluids. By isolating the process medium from the transmitter diaphragm, the system ensures long-term measurement stability.

Filling Fluid Temp. Range	-55°C~315°C
Special Filling Fluid Temp. Range	0°C~600°C
Pressure Range	-100kPa~10MPa
Flange Size	Flush type: DN15~DN125 (1/2"~5"); Extended type: DN40~DN100 (1 1/2"~4")
Diaphragm Material	316L, HC-276, Ta (Tantalum), Ti (Titanium), Monel 400, 321, Inconel 718, Duplex 2507 SST
Filling Fluid	Silicone oil (standard/low-temp/high-temp/ultra-high temp), Fluorinated oil, Liquid metal
Diaphragm Treatment	Gold plating, PTFE coating, PFA protective cover (not for vacuum), Thickened diaphragm, Diamond-like carbon (DLC) coating, Degreasing/cleaning
Flange Standard	ANSI/ASME B16.5, HG/T 20615, HG/T 20592, EN 1092-1, etc.
Sealing Face	RF, RJ, M, FM
Process Treatment	High-temp. / High-vacuum processing



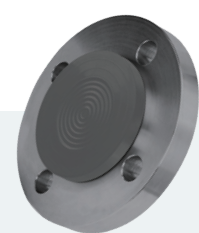
PTFE Coating

Temp.: -40°C~+260°C;
Pressure: 0~5Mpa.
Anti-adhesion properties



Gold Plating

Hydrogen permeation resistance; Superior corrosion resistance



PFA Coating

Temp.: -40°C~+260°C;
Pressure: 0~5Mpa.
Anti-adhesion properties



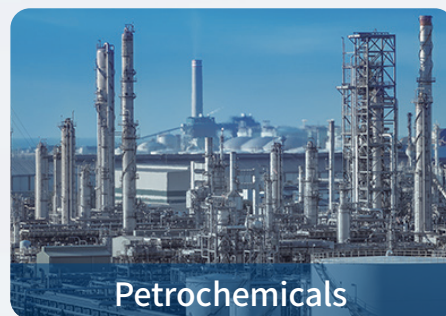
Diamond-like Carbon (DLC) Coating

Extends wear resistance by 10x compared to standard diaphragms.
Temp.: -70°C~+420°C;
No pressure class limitations

Applications



Oil & Gas



Petrochemicals



Marine & Shipbuilding



Equipment Manufacturing



Power Generation



New Energy

Your Partner of Sensing and Measuring

MICRO SENSOR CO., LTD.

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Fax: +86 (29) 8834 6384 Ext. 807
Email: sales@microsensor.cn
Web: www.microsensorcorp.com



Version 2.0

MICROSENSOR

MDM7000 Smart Pressure Transmitter



Company Profile

Since its inception in 1993, Micro Sensor Co., Ltd. (Micro Sensor) has been a global manufacturer and service provider of industrial measurement and control instruments. The company specializes in customized solutions for pressure, level, temperature, and flow measurement, serving a wide range of industries including oil & gas, renewable energy, industrial gases, water & wastewater, marine & shipbuilding, HVAC, hydraulics & pneumatics, mechanical manufacturing & automation, food & beverage, and pulp & paper. Micro Sensor has a global team of over 800 employees and operates four industrial parks in Baoji, Xi'an, and Shanghai, China. It also has a European subsidiary, Micro Sensor GmbH, in Essen, Germany.

Intelligent Manufacturing

- Automated assembly, inspection, and packaging with full-process digital monitoring of key operations
- Unified MES/ERP platform for end-to-end connectivity of production planning, materials, and quality
- Enhanced process performance and predictive maintenance powered by Big Data and AI

CNAS-Certified Laboratories

- Accredited laboratories in Shanghai, Xi'an, and Baoji, covering over 500m²
- Capability for high-level pressure/temperature calibration, EMC, environmental, and reliability test in self-developed systems for automated acquisition and analysis of 15 types of digital/analog signals
- Quality Management System

Quality Management System

- Certified for ISO 9001, Environmental, Occupational Health & Safety, and Measurement Management Systems Specialized ATEX and IECEx Quality Management System certifications

Manufacturing Base



10,000m²
Floor Area

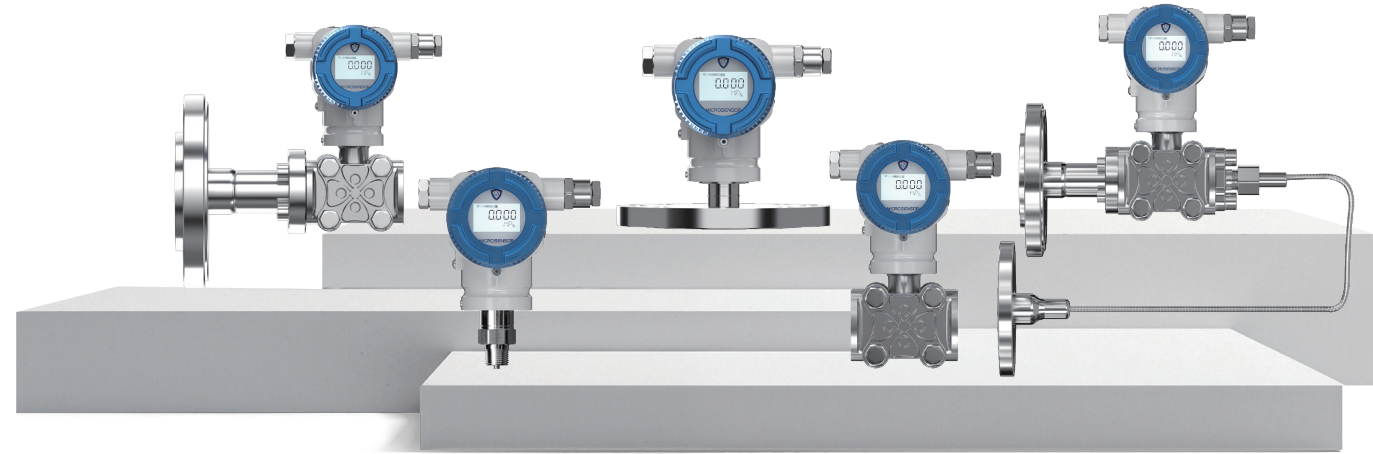
5,000m²
Production Area

500,000 units
Annual Capacity

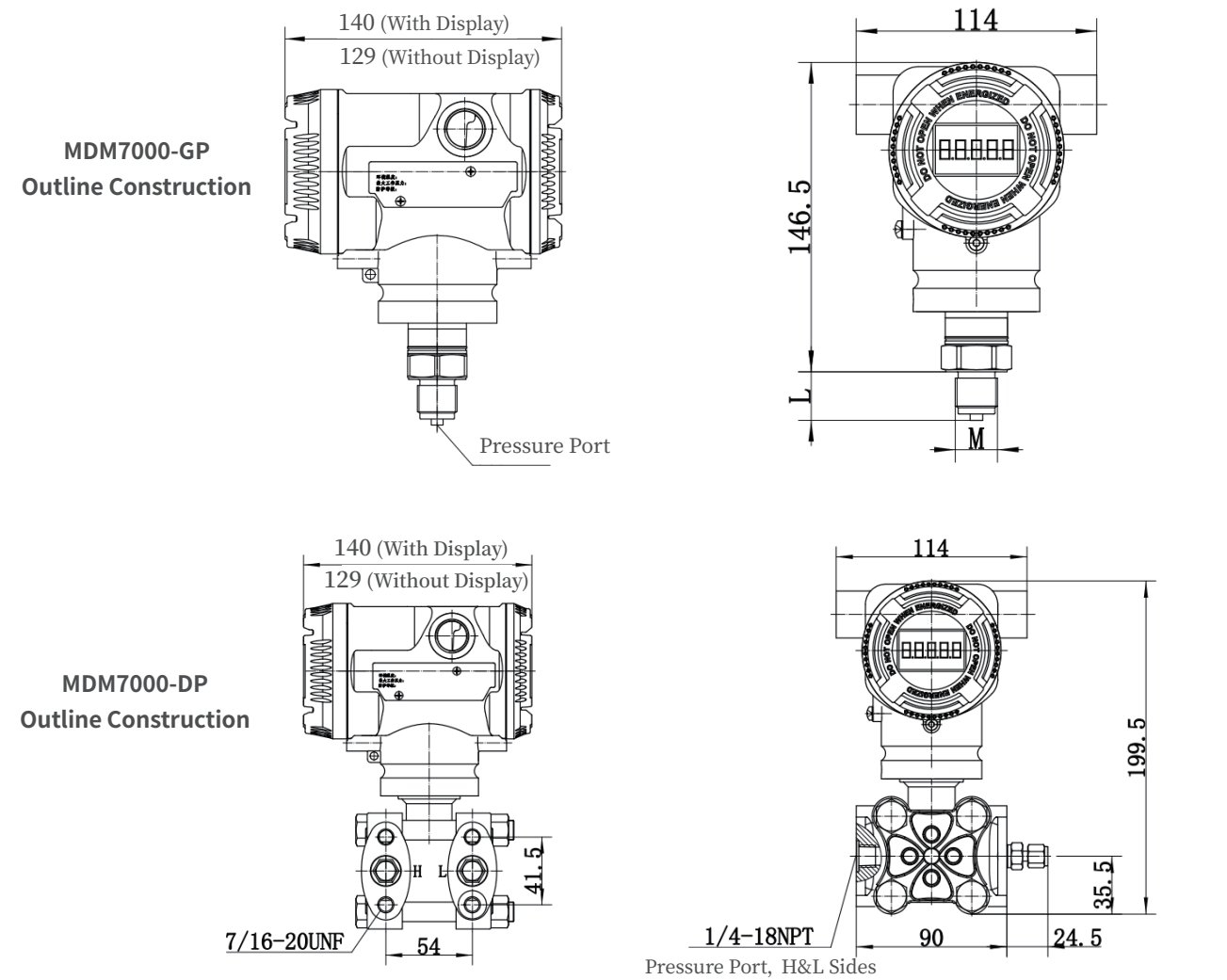
Minhang, Shanghai

MDM7000 Smart Pressure Transmitter

MDM7000 Smart Pressure Transmitter is a high-precision, high-stability smart measuring instrument featuring advanced composite monocrystalline silicon technology and a modular design. It integrates precision linear calibration and temperature compensation to ensure accurate measurement of gauge, absolute, and differential pressure for liquids, gases, and steam, as well as level, flow, and density. Featuring self-diagnosis, superior EMC performance, and a wide range of wetted materials, the transmitter provides reliable solutions for oil & gas, petrochemicals, marine & shipbuilding, new energy, and power generation.



Product Dimension Drawing

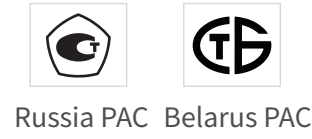


Product Certifications

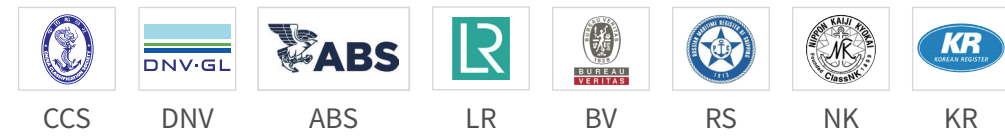
Explosion-proof Certifications



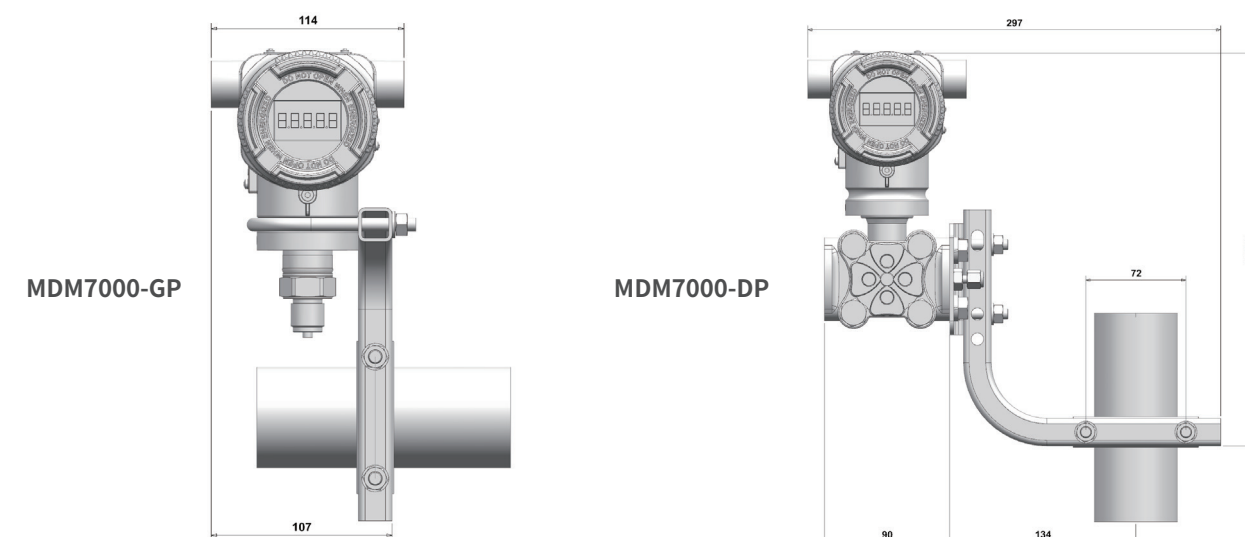
Metrological Certifications



Marine Approvals



Installation Diagram



Core Technologies

1. Superior Temperature Stability

- Integrated temperature sensors and "T-P" matrix model minimize temperature-induced errors

2. Robust Overpressure Protection

- Integrated construction avoids stress concentration to prevent permanent diaphragm deformation or damage
- Internal overpressure and mechanical limits safeguard core sensing elements

3. Exceptional Static Pressure Performance

- Symmetrical sensing element with dual-isolation diaphragms and silicone oil filling ensures stable output under high-pressure conditions

Static Pressure Effect	Accuracy
Range $\leq 10\text{kPa}$, $\delta \leq \pm 0.5\%FS/10\text{MPa}$	
$10\text{kPa} < \text{Range} \leq 40\text{kPa}$, $\delta \leq \pm 0.1\%FS/10\text{MPa}$	
$250\text{kPa} \leq \text{Range} \leq 1\text{MPa}$, $\delta \leq \pm 0.075\%FS/10\text{MPa}$	
$3\text{MPa} \leq \text{Range} \leq 10\text{MPa}$, $\delta \leq \pm 0.15\%FS/10\text{MPa}$	

4. High Accuracy & Long-term Stability

- High-performance monocrystalline silicon technology eliminates hysteresis and fatigue
- Accuracy: Up to $\pm 0.05\%FS$; 10-year stability: $\leq \pm 0.1\%FS$

5. Proprietary Corrugated Diaphragms

- Custom corrugated designs maximize effective sensing area for superior accuracy and sensitivity across various materials

6. Advanced Vacuum Oil Filling

- Fully automated high-vacuum filling eliminates air bubbles to ensure superior accuracy and thermal stability
- Integrated sensors provide real-time monitoring of vacuum level, oil volume, purity, and welding quality to meet the industrial standards
- Supports up to 20m capillaries for high-level applications

Key Parameters

Accuracy	$\pm 0.05\%FS$ (Min.), $\pm 0.075\%FS$ (Max.)
Turn Down(Range Ratio)	100:1
Measuring Range	DP: 0~100Pa~10MPa
	GP/AP: 0~3kPa~100MPa
Power Supply	Intrinsically safe HART: 18.3V~30V DC
	Non-intrinsically safe HART: 18.3V~44V DC
Electrical Connection	M2.0*1.5, 1/2NPT
Diaphragm Material	316L, Hastelloy C, Tantalum, Titanium, Monel, Duplex 2507
Housing Material	Aluminum alloy, 316L SS, Low-copper zinc
Fill Fluid	Silicone oil (standard / low-temp / high-temp), Fluorinated oil
Output Signal	4~20mA DC + HART 7.0
	4~20mA DC + HART 7.0 (Opt. Bluetooth)
	Modbus-RS485
	1~5 V
EMC	EN IEC 61326-1: 2021 (Class A)
	GB/T 17626.2.3.4.5.6.8 (Level 4A)
Overpressure	DP 42MPa
	GP/AP 80MPa
Long-term Stability	$\leq \pm 0.1\%FS/10$ years
Load Resistance	$RL \leq (VS-VM) V/0.021A$ (RL: max. load resistance; VS—power supply; VM=13V)
	4mA~20mA DC, 2-wire: $0\Omega \sim 1476\Omega$ (Includes signal receiving and transmission cable resistance)
	4mA~20mA DC, HART 2-wire: $250\Omega \sim 800\Omega$ (Includes signal receiving and transmission cable resistance)
Vibration Effect	$< 0.1\%$ (GB/T18271.3/IEC61298-3)
Temperature Effect	$\pm (0.075+0.0375TD) \% 10^\circ\text{C}$ of SPAN
Ambient Temperature	$-50^\circ\text{C} \sim 85^\circ\text{C}$
LCD Temperature	$-40^\circ\text{C} \sim 70^\circ\text{C}$
Ambient Temperature (Explosion-proof type)	$-40^\circ\text{C} \sim 70^\circ\text{C}$
Humidity	5%~100%RH@40°C
IP Rating	IP66/IP67
Weight	MDM7000-DP/DGP/DAP: 4.0kg
	MDM7000-GP/AP: 1.56kg