

MICROSENSOR

INSTRUMENTATION SOLUTIONS FOR HVAC & LIQUID COOLING SYSTEMS

For Building HVAC, Chillers, CDUs, and AHUs & Terminal Units



Compact | Reliable | Easy to Integrate

Empowering Sustainable Development with Measurement and Control Solutions

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.



Smart Manufacturing

Automated assembly, inspection, and packaging with full-process monitoring of key operations; Unified MES/ERP systems 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 testing; Self-developed systems for automated acquisition and analysis of 15 types of digital/analog signals.



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



Xi'an High-Tech Industrial Park



Baoji Jiangtan Industrial Park



Shanghai Minhang Industrial Park

Site Area: 20 Mu (approx. 13,333 m²)
Floor Area: 8,543 m²

Site Area: 54 Mu (approx. 36,000 m²)
Floor Area: 27,629 m²

Site Area: 5.08 Mu (approx. 3,387 m²)
Floor Area: 17,101 m²

Product Certifications



CE



RoHS



UL



ATEX



IECEx



CSA

Industry Monitoring Solution

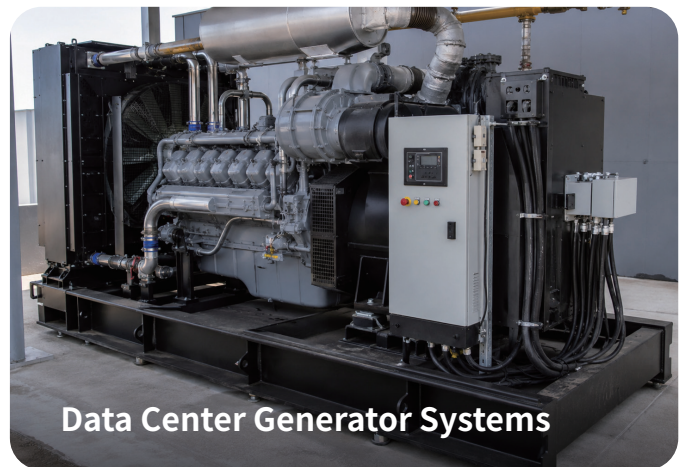
Micro Sensor provides precision instrumentation for HVAC and data center liquid cooling systems, monitoring critical parameters including pressure, temperature, flow, humidity, and water quality. Solutions cover building HVAC, chillers, data center CDUs, AHUs, and chilled/condenser water loops.

As equipment grows more compact and BMS energy management demands increase, systems face operational risks like pressure differential fluctuations, coolant underflow, thermal spikes, fluid degradation, filter clogging, pump instability, and delayed alerts.

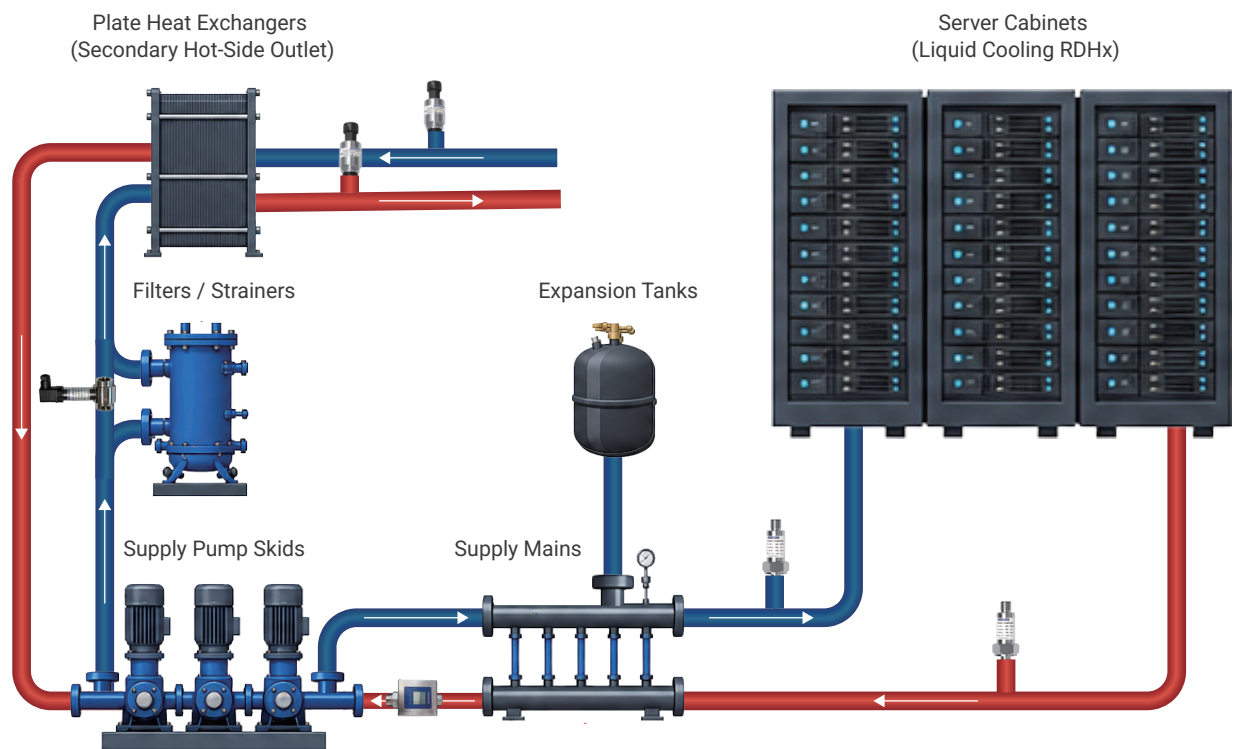
A complete portfolio—comprising compact pressure transmitters, pressure and temperature transmitters, electromagnetic/turbine flowmeters, RTD temperature sensors, temperature and humidity transmitters, and water quality analyzers—enables continuous tracking of line pressure, temperature differentials, flow rates, and fluid health. All devices support 4-20mA, RS485, and Modbus for seamless PLC and BMS integration.

Through multi-parameter monitoring and tailored configuration, this solution helps OEMs and system integrators eliminate risks of overpressure, low flow, leakage, scaling, and downtime—enabling energy analytics and predictive O&M for long-term operational reliability.

Typical Applications



Data Center Coolant Distribution Unit (CDU)



Establish a reliable multi-parameter monitoring system covering supply/return loops, pump skids, heat exchangers, and coolant conditions.

Application Challenges

High Heat Flux Density

Surging AI compute power continuously drives up rack heat loads

Space Constraints

High CDU and piping integration demands compact, easy-to-install instrumentation

Continuous and Stable Operation

Coolant loops require stable pressure, flow, and temperature control

Demanding O&M Requirements

Predictive fault alerts and operational status visualization are critical

Pressure

Pressure Transmitter Pressure and Temperature Transmitter

Flow

Electromagnetic Flowmeter Compact Turbine Flowmeter Compact Electromagnetic Flowmeter

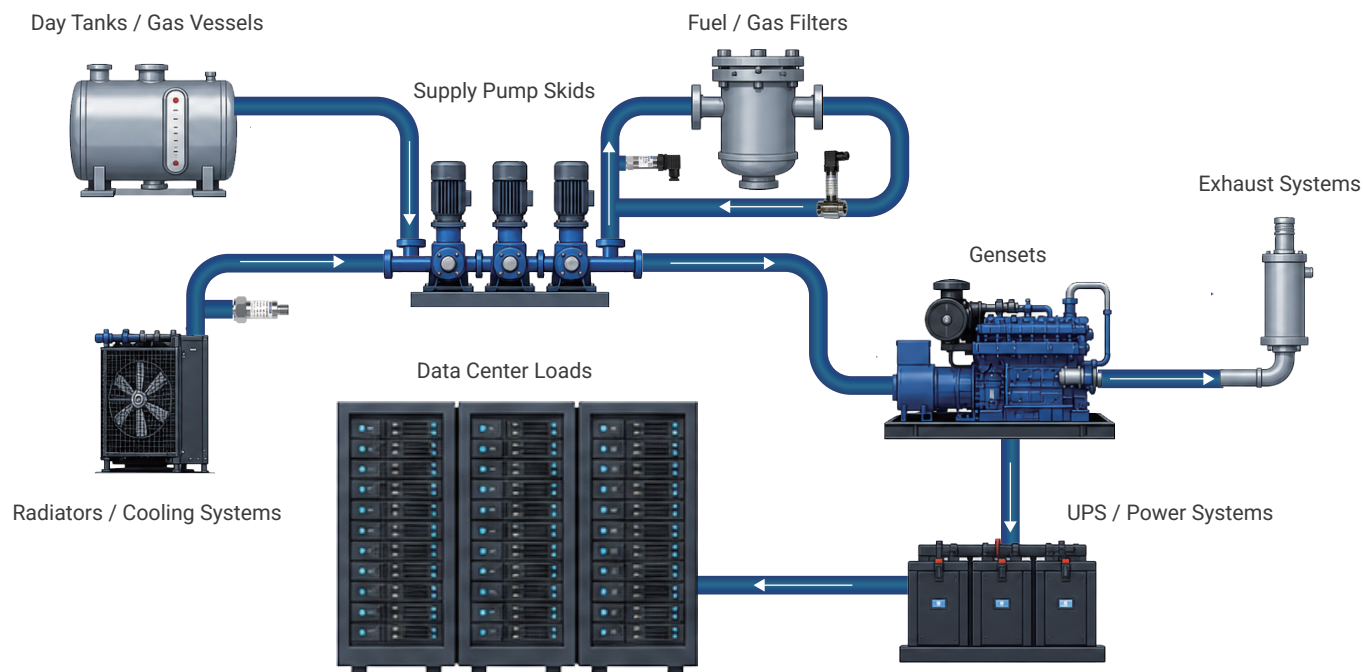
Temperature

RTD Temperature Sensor Temperature Transmitter Temperature and Humidity Transmitter

Water Quality Analysis

Water Quality Analyzer

Data Center Generator Systems



Establish a reliable multi-parameter monitoring system covering fuel, lubrication, cooling, exhaust, and ambient room conditions.

Application Challenges

 Emergency Power Backup Assurance	 Equipment Protection	 Fuel and Cooling Management	 Platform Integration
Ensures rapid, reliable startup and operation of generator systems during utility power outages	Monitors critical parameters such as oil pressure, coolant temperature, and filter status	Monitors fuel supply, cooling loops, and lubrication status to reduce failure risks	Supports data acquisition for BMS, PLC, and Power Facility Monitoring Systems (PFMS)

Pressure



Pressure Transmitter

High-Temperature Pressure Transmitter

Flow



Compact Electromagnetic Flowmeter

Electromagnetic Flowmeter

Compact Turbine Flowmeter

Mass Flowmeter

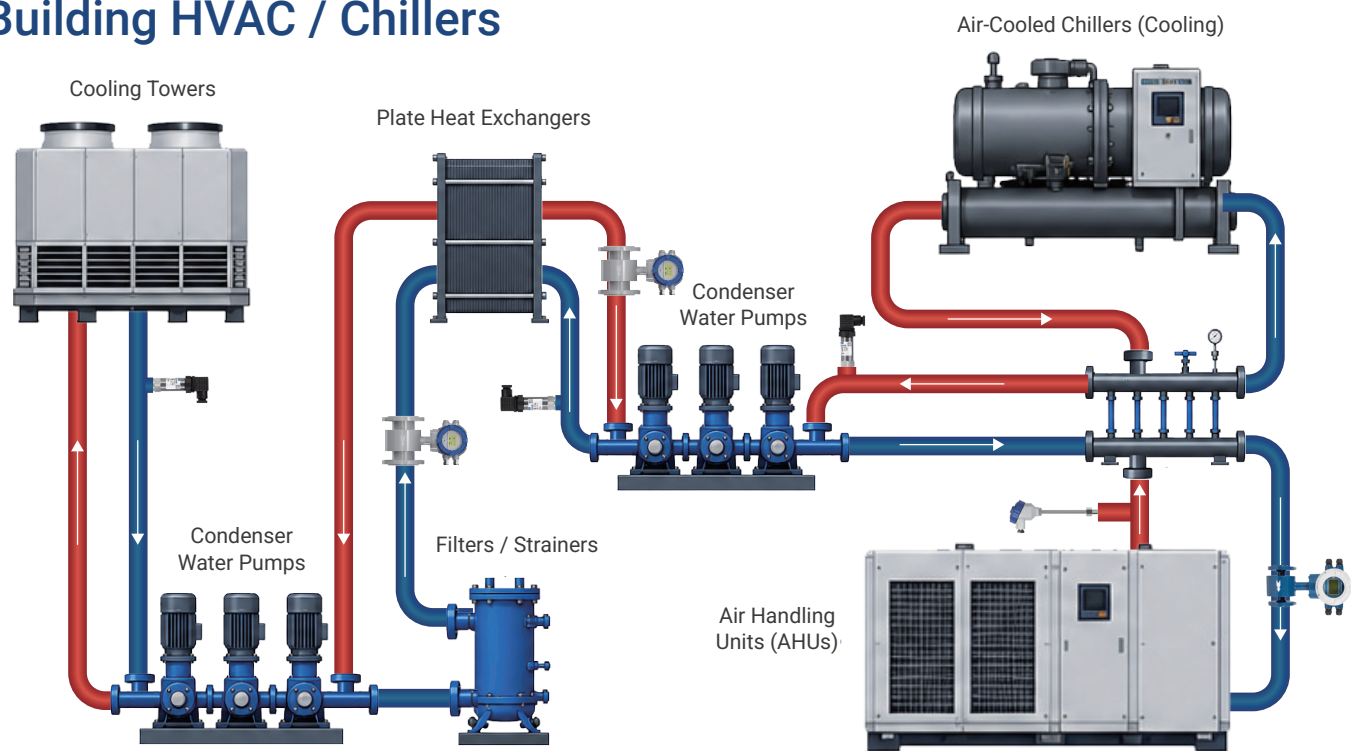
Temperature



RTD Temperature Sensor

Temperature Transmitter

Building HVAC / Chillers



Establish a reliable multi-parameter monitoring system covering chilled water, cooling water, heat exchanger stations, and terminal AHUs.

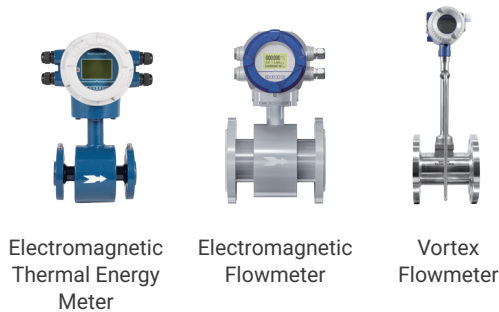
Application Challenges

			
Stable Cooling and Heating Supply	Equipment Protection	Energy Saving and Thermal Energy Metering	BMS/BAS Integration
Ensures continuous, reliable operation of chilled and cooling water systems	Monitors critical equipment status, including pump skids, strainers, and heat exchangers	Supports energy efficiency optimization through flow, temperature differential, and pressure data	Supports data acquisition for seamless BMS, PLC, and Building Automation System (BAS) integration

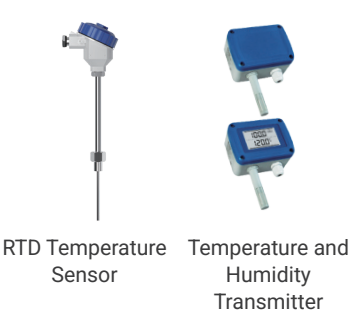
Pressure



Flow



Temperature



Category	Product Series	Image	Measuring Range	Accuracy	Output Signal	Power Supply	Medium Temperature
Pressure Transmitters	Compact Pressure Transmitter		0MPa ~ 1MPa	±0.25%FS ±1%FS ±2%FS	0.5V~4.5V DC	5V±0.1VDC	-40°C~+125°C
	Compact Pressure Transmitter		-100kPa~100MPa	±0.1%FS ±0.5%FS	4mA~20mA DC 0.5V~2.5V/4.5V DC 0/1V~5/10V DC RS485 MODBUS-RTU	11V~28V DC 3.3V/5V DC	-30°C~+80°C
	Pressure and Temperature Transmitter		-100kPa~100MPa	±0.25%FS ±0.5%FS	RS485 ASCII RS485 MODBUS-RTU	3.6V ~ 28V DC	-30°C~+80°C
	Monocrystalline Silicon Pressure Transmitter		DP:0~10MPa GP/AP: 0~100MPa	±0.075%FS ±0.05%FS	4mA~20mA DC+HART Bluetooth Modbus-RS485 1~ 5V Low Power	Intrinsically Safe HART: 18.3V~30V DC Non-intrinsically Safe HART:18.3V~44V DC	-50°C~+85°C -40°C~+70°C (LCD)
Level Transmitters	Submersible Level Transmitter		3.5m~200m H ₂ O	±0.075%FS ±0.05%FS ±0.25%FS ±0.1%FS	4mA~20mA DC RS485/HART Protocol	RS485: 10V~28V DC HART: 12V~30V DC	-20°C~+80°C
Temperature Transmitters	Compact Temperature Transmitter		-20°C~+200°C	±0.25%FS ±0.5%FS ±1%FS	4mA~20mA DC	12V~30V DC	-20°C~+200°C
	RTD Temperature Sensor		-200°C~+500°C	Class AA/Class A /Class B (Customizable)	Ω	24VDC	-200°C~+500°C
	Temperature and Humidity Transmitter		Temperature: -40°C~ +125°C Humidity: 0~100%RH	±2% RH	4mA~20mA DC RS485 Modbus-RTU PT100/PT1000	10~30VDC	-40°C~+125°C
Flowmeters	Compact Electromagnetic Flowmeter		DN6~DN50	±0.5%FS	4mA~20mA DC RS485 Modbus-RTU	16V~30V DC	-20°C~+55°C
	Compact Turbine Flowmeter		DN4~DN200	±0.5%R ±1%R	4mA~20mA DC RS485 Modbus-RTU 1~5V Pulse HART	24V DC 220V AC	-20°C~+120°C
	Mass Flowmeter		DN4~DN300	±0.15%FS ±0.2%FS ±0.5%FS	4mA~20mA DC RS485 Modbus-RTU Pulse Output	24V DC 12V AC	-196°C~+85°C
	Electromagnetic Thermal Energy Meter		DN25~DN400	Class 2 (Energy) Temperature: ±1%FS	4mA~20mA DC RS485/RS232 Modbus-RTU Frequency/Pulse Output	24V DC 220V AC	-50°C~+200°C
Water Quality	Conductivity Meter		0~20000 μS/cm	Conductivity: ±1%FS Temperature: ±0.3°C	4mA~20mA DC RS485 Modbus-RTU 2 x SPDT Relays	100V~240V AC 24 V DC	0~60 °C
	pH Meter		0~14 pH	pH: ±0.02 pH Temperature: ±0.3°C	4mA~20mA DC RS485 Modbus-RTU 2 x SPDT Relays	100V~240V AC 24 V DC	0~60 °C
	Turbidity Meter		0~4000 NTU	±5% or 0.5 NTU (Max.)	4mA~20mA DC RS485 Modbus-RTU 2 x SPDT Relays	100V~240V AC 24 V DC	0~60 °C



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