BICCNS®

Clamp-On Ultrasonic Flowmeters

BICCNS
Baicon Intelligent Control Cutting-edge Next-gen Sensing

BICCNS®

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External Measurement

Suzhou Baicon Sensor Technology Co., LTD (BICCNS®)

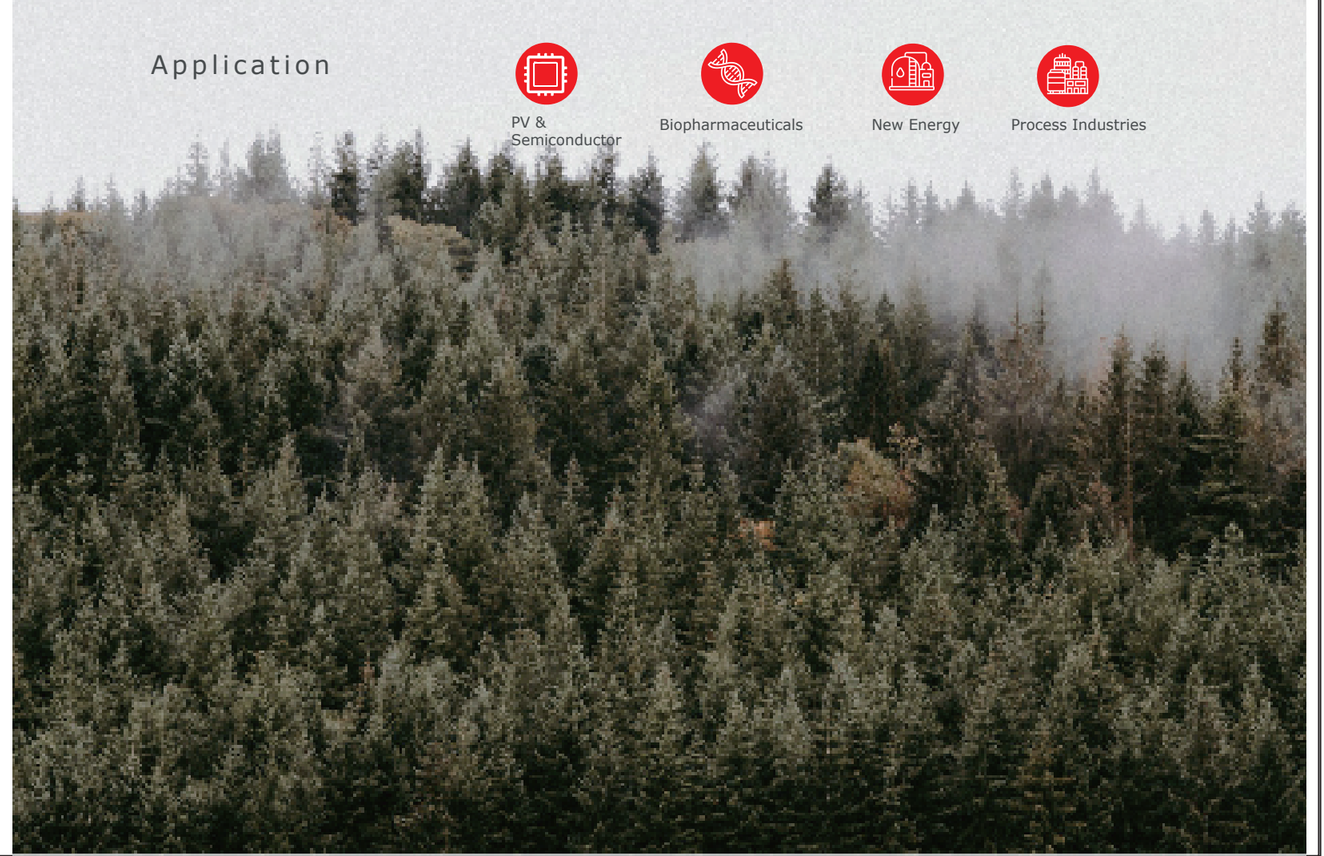
About BICCNS

BICCNS is a global leader in precision measurement and control, headquartered in Suzhou with R&D in Shanghai and branches in Singapore and the U.S. In the semiconductor and biopharmaceutical industries, BICCNS provides high-purity pressure gauges and ultrasonic flow meters, enabling real-time online monitoring of pressure and flow. Committed to technological differentiation, product platformization, and globalized services, BICCNS drives advancements in high-end manufacturing.

With independently developed chip designs, BICCNS has introduced a 20Pa micro-pressure sensor and ultra-high accuracy products with 0.01% precision by 2025. The clamp-on ultrasonic flow meter delivers exceptional accuracy in both flow and temperature measurements, achieving ±2% reading accuracy with a 25:1 turndown ratio. Its temperature measurement is ten times more accurate and one thousand times faster in response compared to conventional methods. With full-process control over R&D and manufacturing, BICCNS meets SEMI standards and empowers breakthroughs in advanced semiconductor processes.

Application

- PV & Semiconductor
- Biopharmaceuticals
- New Energy
- Process Industries



FM700A

External Measurement

No Pipe Cutting and Downtime
Zero Pressure Loss
Leak- and Contamination-Free

Multi-Pipe Compatible

Steel Compatible
Plastic Compatible
Hose Compatible

Easy Installation

Manual Quick Installation
No Training Required

High-Precision Flow Measurement

±3%R.D. 10%~100% of F.S.

±0.3%F.S. 0~10% of F.S.

Revolutionary Temperature Measurement

±0.5℃ Max Accuracy

ms Response Level

Real-time Measurement

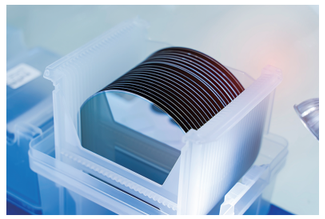
FM700A-Significant Cost Reduction

TRADITION	Maintenance: Shutdown Disassembly Cleaning Calibration Installation Fastening Sealing Startup	Perform Maintenance Clean the Sensors Replace the Seals Carry out Calibration
	Power On	Start operation and resume production
	Sealing	Implement sealing measures to prevent leakage
	Fastening	Flanges, threads or others to fasten
	Installation	Install the flowmeter in the designated position
	Pipe Cutting	On-site cutting of the pipeline
	Shutdown	Stop the pipeline fluid supply and halt production
	Flowmeter	Product and material costs

FM700A COST	FM700 A Saving Cost	
	Maintenance: Callibration	Installation, Perform maintenance, clean the sensors, replace the seals, and carry out calibration
	Installation	Easy Installation
	Flowmeter	Save Product and Material Cost

Application Scenarios

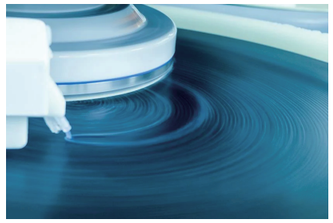
Cleaning



Non-Contact
Measure Multiple Fluid

- UHP Water
- HF
- HCl
- NaOH

CMP



Ultrasonic measurement
of non-conductive fluids

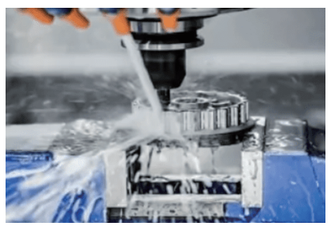
- UHP Water
- Polishing Liquid

Cooling

No pipe cutting required
No fluid leakage risk

- Cooling Water
- UPW
- Ethylene Glycol
- Fluorinated liquid

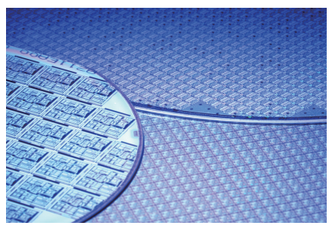
Lubrication



Clamp-on installation
saves equipment space

- Hydraulic Oil
- Machine Oil
- Refrigeration Oil
- Sealing Oil

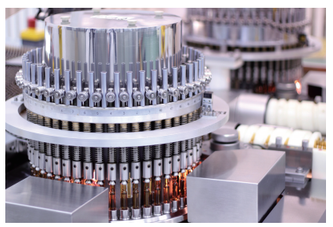
Semiconductor



Non-Contact With Fluid
Calibration And Maintenance
Without Downtime

- UPW
- Etching Solution
- Stripping Solution
- High-Purity Reagents

Food & Pharmaceutical



Non-intrusive installation
no risk of contamination

- Buffer Solution
- Growth Medium
- Cleaning Solution
- Disinfectant Solution

Technical Features:

V-Method Measurement

A single-sided sensor emits and receives ultrasound,
with reflections off the pipe wall extending the acoustic path,
thereby enhancing temporal resolution.

AGC+VGA Technology

The dual-gain AGC and VGA system enables reliable
operation under more demanding conditions.

Ultrasonic Direct Thermometry

Utilizes the known relationship between ultrasound velocity in a liquid
and temperature. By emitting ultrasonic pulses and recording downstream/upstream
time differences, temperature is determined from a calibration curve
with a resolution of ±0.1°C.

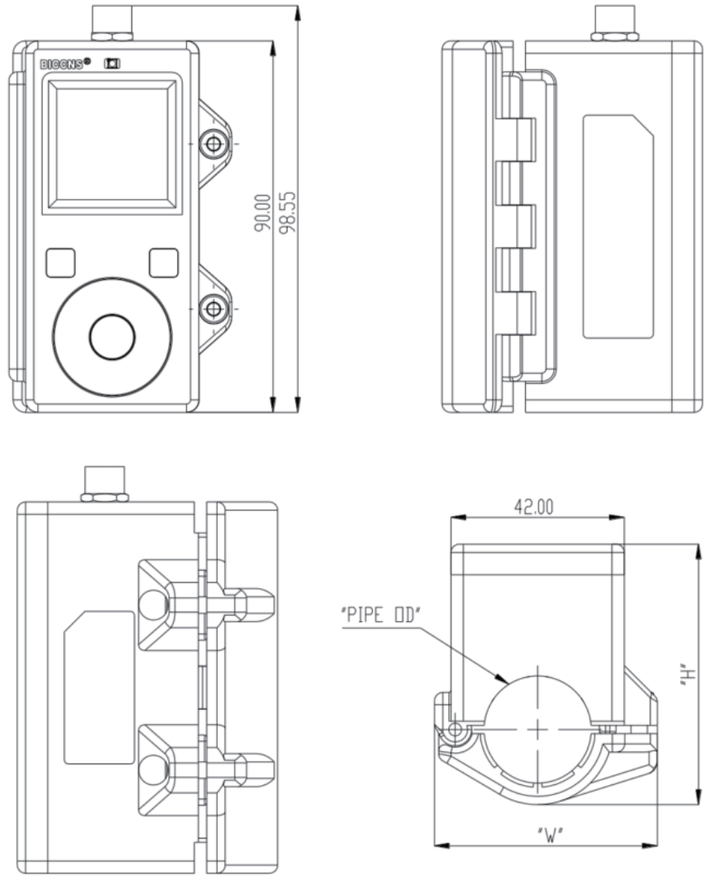
Filtering Algorithm

BICCNS employs a unique filter-fusion algorithm that effectively suppresses
pulse inter ference , enhances signal stability, and improves measurement accuracy

ACS Technology

Utilizing the BICCNS automatic sound speed adaptation scheme,
the on-site sound speed is calculated and corrected in real time,
compensating for variations in sound speed and improving flow
measurement accuracy

Dimension Unit: mm

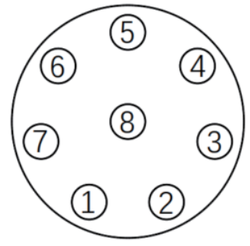


Model No.	"C"	"W"	"H"	"OD"
FM700A-08	Max.54	42	68	12.7
FM700A-15	Max.58	42	68	19.1
FM700A-20	Max.65	50	70	25.4

Technical Feature

Model	FM700A - 08	FM700A - 15	FM700A - 20
Pipe Spec	1/2"	3/4"	1"
OD (cm)	12.7	19.05	25.4
Flow Range	20L/min	60L/min	100L/min
Accuracy 10%~100%F.S.	±3% R.D.		
Accuracy 0%~10%F.S.	±0.3% F.S.		
Pipes Material	Plastic, PFA, Steel, Hose., etc		
Fluids Type	UPW, Water, Chemical, Oil., etc		
Output	4-20mA+Switch PNP/NPN, RS485, IO-Link(Optional)		
IP Grade	IP65		
Medium Temp.	0~85℃		
Ambient Temp.	(-10~65)℃ (Non-condensing)		
Humidity	35~85% RH (Non-condensing)		

Pin Assignment



Pin	Color	Definition
1	White	CGND
2	Brown	485_B
3	Green	485_A
4	Yellow	IOUT
5	Grey	DI_DO_CH2
6	Pink	DO_CH1
7	Blue	0V
8	Red	DC24V